

Archive

The Subscription Magazine for Acorn Users

SEPTEMBER

'94

September 1994

Vol. 7 N° 12

Online Media – Digital Superhighway

Drawfile Display in Basic

Internet, Fidonet & Schools

Acorn and the National Curriculum

Quo Vadis – Using Multimedia

Second Impressions of the Risc PC

Using a Notebook PC with an Archimedes

Reviews: An Eye For Spelling, Autograph, Basic WIMP Programming, Birds of War, Elementary PipeDream Book, Flashback, Gothic & Medieval Font Collection Pack II, GridPro, Payroll Manager, Premier Manager, Talking Rhymes.

n c s 

NORWICH COMPUTER SERVICES

Customer Service Survey

As part of our continuing efforts to improve and develop the services we give you, we are asking if you will help us by taking part in another Customer Service Survey. I would be most grateful if you could spend a short while completing the enclosed questionnaire about Norwich Computer Services and Archive. (Even if you do not intend re-subscribing to Archive, we would value your response to the questionnaire.)

I hope that those of you who responded to our survey last year, will feel that you have benefited from the changes/improvements made as a result of the questionnaire comments. We appreciate your support – thanks, in anticipation, for your contribution! Certainly, if the growth in subscription is anything to go by, Archive is more appreciated now than it was this time last year.

Happy reading!

Paul Beverley

Government Health Warning – Reading this could seriously affect your spiritual health.

Last month I mentioned the Alpha courses which are being run at churches all over the UK. Here are some comments from people who have been on the courses...

Lee Duckett is a Mercury Telecoms engineer who went to do a job at Holy Trinity Brompton (the church where the Alpha courses first started). He began chatting to the girl on the reception desk, who suggested he might like to try Alpha.

He came to the first night and said later, "I couldn't believe it. It wasn't at all what I expected. All the people looked normal. I thought they would be people who would speak funnily, wearing pairs of glasses with little bandages on – anorak jobs, and stamp collectors."

Lee was impressed by the leader of his discussion group. "I thought, 'He's got what I'm missing. He's got something – something I want.'" During the course, he gave his life to Jesus Christ and he said later: "My life has completely changed. I now look at this world through different eyes. I feel love for everyone and an inner peace that I never imagined could exist."

Bruce Streather is a London solicitor whose wife, Geraldine, had been a Christian for 10 years when he went to an Alpha supper party. (These are held at the end of every course as an opportunity for participants to invite their friends to hear a light-hearted talk on the subject "Christianity: Boring, Untrue and Irrelevant?") He got talking to Nicky Gumbel who gave the talk and agreed to go on the next Alpha course.

"The more I did the course, the better I enjoyed it," he said. "I was struck by all the evidence, but I wasn't really convinced. I thought at least it was making sense and I could understand why people actually believed it."

At the seventh talk on 'How can I resist evil?', he became struck by a thought which would not go away. "I suddenly thought," he said, "that if there is an evil influence about, is it the biggest step in the world to believe that there is a good spiritual influence? That means there is a God... and Jesus... and Christianity... and the penny dropped."

Soon after that, he said a prayer in bed at night: "I confessed what I'd done wrong, I repented of it and turned away from it and I asked Jesus to come into my life."

Hundreds of people all over the country are going on Alpha courses and having similar experiences. It's wonderful to see the sense of relief and excitement on people's faces when they have had a real encounter with the Living God. People go on one course and then bring their friends on the next... and they bring their friends... It's no wonder these courses are spreading like wild fire!

For more information about Alpha, or to see if there is one in your area, ring HTB on 071-581-8255 or the Alpha Helpline on 0603-765073.

(If you have been touched by God in a new way through an Alpha course, do write and let us know.) p.g.

Archive

The Subscription Magazine for Acorn Users

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Products Available

• **Archive mousemats** – We are having some top quality Archive mousemats made for us. They will have antistatic plastic tops with non-slip rubber base – none of your flimsy cloth-top mousemats these! The rather tasteful design features the Archive logo and the Norwich Computer Services logo and the cost is £5 each including p&p.

(These shouldn't really be in Products Available because they aren't going to be ready until the end of September. Still, you can place your orders with confidence – they aren't vapourware. Paul Beverley, MD of Norwich Computer Services, assured our Archive reporter, "The software is virtually finished – just one or two bugs to be ironed out – we have to make sure, of course, that there are no viruses on it. Also, we're waiting for the manuals to be printed.")

• **Archive PD discs** – It was in July 1988 (yes, six years ago!) that Archive launched its first disc of PD software. At that stage, the PD discs were a first in the Archimedes world and we feel they performed a very useful function in the early days of Archimedes computers and software. However, we have reached a point where Archive PD, by and large, has outlived its usefulness.

We have decided to transfer all our PD material over to APDL (address in Factfile). So if you want any of the programs and applications we have published in the past, please contact APDL. However, there are a number of programs that are still very popular and things like the Archive data for the Arcscan database

are being maintained as a set of Archive PD discs. (We are dropping the Shareware and Careware names altogether.) The discs still available at £2 each are:

• **Archive Utils 1** – (was Careware 18) – VIDC enhancer software (2 versions), iconbar mode number display, modes for Sony CPD-1402, modes for Acorn AKF18, various modes and modules for NEC 3D, mode creation and editing for pre-A5000s with AKF18.

• **Archive Utils 2** – (was Careware 19) – !CGM →Draw, !Draw→CGM, !Draw→EPS, !AiEps →Draw !Draw→Meta, !DXF→CGM, !Translator, !Creator (sprites to GIF, TIFF, AIM, PBM), utility to output drawfiles on SketchMate A4 plotter.

• **Archive Utils 3** – (was Shareware 7) – Disc database of Archive magazine plus ArcScan data files for Archive magazine.

• **Archive Utils 4** – (was Shareware 51) – JPEG utilities 1 – !ChangeFSI, version 0.90a; !FYEO, 1.02; !Jewel, 0.04; !JFIF, 26th June 1993; !JPEGinst to install !JPEGit, 1.11A, i.e. the PD version; !JView, 0.07; djpeg (Keith Sloan's implementation), 18 Nov 1991; JPEG-FAQ – a text file pulled off Usenet and headed "JPEG image compression: Frequently Asked Questions".

• **Archive Utils 5** – (was Shareware 52) – JPEG utilities 2 – !FYEO2 (see June JPEG column) sample NASA images plus a 'thumbnails' file with previews of the other available files.

Archive Monthly Program Disc Contents

- Thumbnail creation – Quantum Software have provided a copy of Executor (the playback-only version of Keystroke) which has the ability to produce, from a directory of JPEG or TIFF* files, a multi-sprite file – in effect, making a !Paint 'thumbnail' file.
- Swap Shop catalogue for Multimedia Column (page 18).
- Risc PC palette restorer and mode selection (H & T page 42).
- Risc PC compatibility list from Keith Hodge (page 55).
- Files from Gerald Fitton's PipelineZ article (page 59).
- Drawfile rendering program from Hugh Eagle's article (page 71).
- ArcScan files update for Archive magazine.

Special Offers on Archive Subscriptions

This is the final issue of the 7th volume of Archive magazine and a large proportion of our members are due to renew their subscription this month so we're running some special promotions this month:

• **Free Archive Mousemat** (worth £5) – All those who renew their subscriptions before 30th September 1994 will receive one of our new high-specification mousemats – see opposite for details. This offer is available to anyone, regardless of when your renewal date is.

(N.B. We will not actually be sending out the free mouse mats until *after* 30th September. This will enable us to get the right number of mats printed once we see what the take-up is for the offer.)

• **Renew early and save £3** – We've held the price of the magazine at £19 for the last two years and will continue to do so until the end of 1994. So this is advance warning that, from issue 8.4 onwards, the new Archive price will be £22 a year. If you would like to beat the price increase and renew in advance, regardless of when your subscription expires, you should send in your renewal before the end of the year. Renewals received after 1st January 1995 will be at the new price of £22.

• **£10 voucher** for any Archive member who gets a friend or colleague to subscribe to Archive. See the special order form on the back of this month's Price List for details.

• **Archive Utils 6** – Hard drive utilities including SyQuest 105Mb fix for A5000/Risc PC.

• **Archive Utils 7** – Acorn's new printer drivers !Printers 1.22.

• **Barcode generator** – Kang Software have produced a RISC OS application that generates drawfiles of barcodes in a variety of formats: EAN-13, EAN-8, ISSN, ISBN and BIC. Within these formats, there is also a variety of other options. The software costs £85 (no VAT) which compares very favourably with PC equivalents costing of the order of £150 +VAT.



• **Betsi** – Another winner from 4Mation. This time it is a historical adventure aimed at 7 – 12 year-olds studying the Tudor period. Betsi is a dog who, having been evicted from the royal hunting kennels for being too soft, is looking for someone to provide her with a comfortable home where she will be loved. During her travels, she meets all manner of folk from different backgrounds, sees the interiors of various buildings, hears some of the things that

people were concerned about at that time, and welcomes opportunities to be a good citizen.

Betsi costs £34.50 +VAT (or £38 through Archive). A site licence costs £69 +VAT (or £75 through Archive).

• **CC takes over** – Computer Concepts have taken over distribution of all Wild Vision products so that WV can concentrate on development work. One effect of this is a reduction in the discount given to dealers. This has had to be reflected in a reduction in Archive members' discounts on WV products.

• **Celtic clipart 2** – Glyn Howells has produced a second disc of celtic clipart including borders, panels, chains, crosses and motifs. As with disc 1, this costs £10.99 inclusive, or you can get both of them together for £18.99. (There is no VAT as Glyn is not VAT registered.) They are available from: Glyn Howells, Sicar Uchaf, Brongest, C N Emlyn, Dyfed, SA38 9ET.

• **Flashback** – We gave details of US Gold's new game last month (page 4) but forgot to tell you the price. Flashback costs £27.99 or £26 through Archive. (See the review on page 27.)

• **Goldilocks** – This is a Genesis application from Oak Solutions "designed to introduce young children to IT skills through a professionally pro-

Christmas Card Competition

Acorn Computers are running a Christmas card design competition and the prize is... a Risc PC ! The theme is "A World of Opportunities" and your job is to design a card using that theme. All entries must be original work and should be produced using an Acorn computer and submitted as a Drawfile plus an A4 hard copy. Entries have to be in by 10th October 1994 so that Acorn can judge the best one and get it printed to use for their corporate card for Christmas 1994.

The terms and conditions are as follows:

- 1) All entries must be received by second post 10th October 1994.
- 2) The prize will be an Acorn Risc PC 600 2Mb HD210.
- 3) The winning entry will be chosen on 24th October 1994 at Acorn House.
- 4) The prize winner will be announced at Acorn World 94 (October 28th-30th 1994).
- 5) Photographs and other promotional material may be requested of the prize winner.
- 6) All designs must be original.
- 7) Only one entry per person or per group.
- 8) Designs cannot be returned.
- 9) The competition is open to all UK residents, except employees and contractors of Acorn Computer Group plc, ARM Ltd and their subsidiaries, agents, dealers or anyone connected with the competition.
- 10) Entries must be submitted in Drawfile format and A4 hard copy.
- 11) Acorn Computer Group plc and its subsidiaries shall have the right to reproduce all designs for future use and applicants shall, if requested, sign an appropriate form of authorization.

duced audio CD and high quality visual interpretation of the traditional fairy tale." While the child is using the program, its use of the various options is recorded so that the teacher can see how the child is progressing. Goldilocks comes on floppy discs with an audio CD and a pack of photocopiable resources and costs £40 +VAT from Oak Solutions or £44 through Archive.

• **Impression manual extras** – If you are an Impression user who makes frequent use of the manual, H B Humpidge has just the thing for you! The pack includes a quick reference guide with keyboard shortcuts (arranged by function), a printed keystrip, a set of divider cards for the manual, some self-adhesive binder strips, about 50 sheets of paper to put your own notes in the manual, two thick card ends to help preserve the integrity of the manual and a pack of ring reinforcements for those pages that get over-used and fall out – he seems to have thought of everything! This comes in three forms: Impression II £6, Impression Publisher £7.50 and a special version for those who have upgraded from Impression II to Publisher £6. These are all avail-

able from H B Humpidge, 2A Kingsley Park Grove, Sheffield, S11 9HL. If you just want the quick reference guide and the keystrip, they are available for £1.50.

• **I/O card alternative** – Risc PC owners, in particular, will be pleased to hear that there is now an alternative to Acorn's dual-width I/O card in single-width format. Paul Fray Ltd have produced a card which provides all the functionality of the Acorn card, except the Midi add-on. So it provides user port, analogue port and 1MHz bus. Advantages of this newer card, apart from it taking up only one slot, are that it has an improved interface that makes it work more reliably with faster systems and it has a socket to take a user-programmed EPROM (128Kb × 8). These cards are available from Paul Fray Ltd for £129 +VAT or £144 through Archive.

• **Izzy & Lizzy in The Playground** – Topologika have released a version of their popular Freddy Teddy title, 'The Playground'. The idea is that it allows the program to be used with older children as Izzy and Lizzy are trendy young children (Izzy looks to me as if he's wearing 'Cats'!) as opposed to the

teddy bear which appeals to younger children. If you already have The Playground, you can obtain Izzy and Lizzy from Topologika by sending them £10 +VAT + £1 p&p (£12.75) and quoting the serial number of your copy of The Playground. Otherwise, you can buy The Playground in a combined format for £25 +VAT + £2.50 p&p (£31.88) from Topologika or £29 through Archive.

• **JPEG Disc number 2** – I said in the JPEG Column last month that the new JPEG Shareware disc was number 51. Actually, that was the number of the first JPEG Shareware disc the new one is, yes, you've guessed it, number 52! It contains FYEO2 (as mentioned in the June JPEG column, p19) plus some of the best of the NASA images sent in by

Philip Draper plus added a 'thumbnails' file with postage stamp-sized previews of Philip's other files. *(Actually, we have just scrapped the Archive Shareware discs, so this has become Archive Utils disc 5.)*

• **MacFS** – MacFS is a filing system for RISC OS 3.1 or later which will read and write Mac SuperDrive (1.44Mb) floppies, external hard discs, magneto-opticals and SyQuests. It costs £99 +VAT from Computer Concepts or £108 through Archive.

• **PD on CD-ROM** – The Datafile have produced a CD-ROM containing 265 Mb of PD, freeware and shareware material, clipart, games, utilities, music, graphics, magazines, games demos, languages, !Earthmap, Gutenberg, classic demos and

Keystroke – Archive Special Offer

Stuart Halliday of Quantum Software is doing a special offer on Keystroke for Archive subscribers. The normal price is £29.95 but he is prepared to offer it at £19 (through Archive) for a period of two months. This is the latest version of Keystroke as detailed in last month's magazine on page 19, i.e. Keystroke 3, not an earlier version. The offer lasts until the November issue of Archive is sent out from NCS. To take advantage of this offer, just send in your order in the normal way but simply do so at £19 instead of £29.95.

There is also a site licence version which is normally £90. This is available for the offer period at £70 through Archive.

(Keystroke is one of those applications which you don't know you need until try it out. Then, once you start using it, you see more and more ways in which you can use it to increase your keyboard productivity. What I will say is that, if you buy Keystroke to enhance your keyboard productivity and you really feel it does not do so, write to me explaining why, send back your copy and we'll refund your money. Ed.)

Personal Accounts – Archive Special Offer

Following the excellent review which Mick Burrell gave Personal Accounts last month (page 65) we have arranged a special deal with Apricote Studios for Archive subscribers only. The full price is £49.95 and the special Archive price is £35. The only difference is that, to save costs, it will not come in a presentation case – which is only designed to make it look pretty on the saleroom counter. The offer lasts for two months, i.e. until the November issue of Archive is sent out from NCS. To take advantage of this offer, just send in your order for Personal Accounts to NCS in the normal way but simply do so at £35 instead of £49.95.

In his conclusion, Mick Burrell said, *"This is a program which has 'developed' through use into an excellent bank account control system. If you tried to find a home or club banking program which was either more capable or easier to use, I doubt you would succeed on either count."*

educational software. PD-CD costs £30 inclusive from The Datafile or £28 through Archive.

- **Professional full-colour scanning service** – We mentioned last month that T-J Reproductions were providing a full Acorn disc-to-print bureau facility and now have full-colour drum-scanning facilities. Unfortunately, we quoted their fax number instead of their phone number. The corrected version is (hopefully!) in the Factfile at the back of the magazine.

Because of the huge files produced by these high resolution colour scans, T-J are looking into offering a file replacement service. What they would do would be to scan the image at low resolution (and send you a copy) as well as at high resolution (which they would store for later use). You could then prepare your document with the low-res image, send it to T-J who would then substitute the hi-res image. This is similar to OPI except that OPI will only work with Impression Publisher whereas this service would be available to users of Style as well. If you are interested, get in touch with T-J and tell them to what extent you might use the service. That will help them to gauge whether it is going to be worth the setting-up costs.

- **Scanlight Professional** – CC have dropped the price of their greyscale A4 flatbed scanner to £499 +VAT. However, they are not giving any dealer discount anymore so they will no longer be available through NCS.

- **Supersound expansion system** – In Archive 7.7 p39, David Lenthal gave details of Audio Dynamics' 16-bit digital audio SuperSound Expansion System. The SSES1600 provides 128 instruments + 49 percussion sounds, Midi in, out and thru, and software which plays Midi files and sample files. The board also has line output on two phono sockets and a 3.5mm stereo socket plus headphone output on ¼" jack socket. SSES1600 costs £299 +VAT from Audio Dynamics or £335 inclusive through Archive.

- **"Technology for Secondary Mathematics"** – There will be a day conference for maths teachers at Oundle School, Peterborough on Monday 3rd October 1994. It will cover Macs and PCs as well as Acorns but it is presented "in association with Acorn

Computers Ltd and Mathematics in Education and Industry". Details from Douglas Butler, Head of Mathematics, Oundle School, Oundle, Peterborough, PE8 4EN (0832-273444).

- **The Acorn Companion**, written by Geoff Love, is a guide to using Acorn computers and software. It is aimed at "the average classroom teacher or non-specialist IT coordinator who needs to know enough to use the computer, solve any problems they encounter and keep things running smoothly but doesn't want to spend every waking hour pawing through jargon-filled manuals." It costs £9 inclusive from NW SEMERC.

- **The Time Machine** – The latest desktop adventure game from Gordon Key is The Time Machine. This is a game for all Acorn machines with 2Mb or more, has five discs, 3Mb+ of sprites, 80 sampled sounds plus music. It seems to be a sequel to Haunted House. At least, you are the same employee of Acorn Antiques but the action starts as you leave the shop to break out of the boredom, go for a long walk, decide you need a leak and espy a blue portaloo in the distance... The Time Machine costs £25.95 from 4th Dimension or £24 through Archive.

- **Tiles French Supplement** – Brain Games have released a supplement to their Tiles program which gives 223 French crosswords to play on their Tiles package. The supplement requires Tiles version 3.29 or later. Tiles and the French Tiles Supplement each cost £19.75 (no VAT) to which you add £4.50 per machine for site licences for each package.

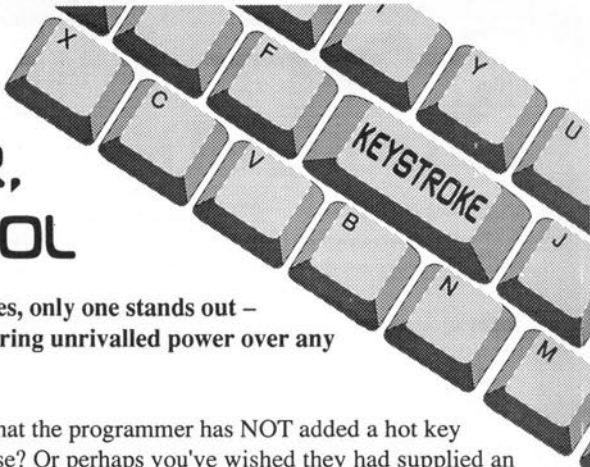
Review software received...

We have received review copies of the following:

- Barcode (b/u), •Beethoven Browser Egmont (e), •Goldilocks (e), •MouseTrap (u), •The Time Machine (g), •Tiles + French Supplement (e).

e=Education, b=Business, bk=Book, g=Game, h=Hardware, l=Language, u=Utility, a=Art.

If you would like to review any of these products, please contact the Archive office. Potential reviewers will need to show that they would use the product in a professional capacity or that they have some knowledge of the particular field. **A**



TOTAL POWER, TOTAL CONTROL

When it comes to genuinely useful utilities, only one stands out – **Keystroke** from Quantum Software, offering unrivalled power over any Risc OS application.

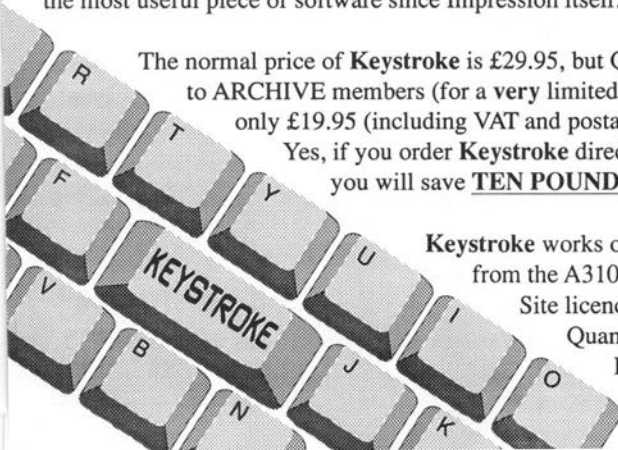
Have you ever used a program and found that the programmer has NOT added a hot key for that one function you always seem to use? Or perhaps you've wished they had supplied an icon to click on instead of those long complicated menus? Well, **Keystroke** is the answer you've been looking for because it can turn just about any desktop chore into a pleasure!

Keystroke is a unique 'macro' maker type program which transforms your computer into a really productive machine, saving you time and money!

- Imagine making your desktop programs perform one or more of their functions in a sequence at the click of an mouse button or the press of a key.
- Gone are any repetitive, long complex series of menu selections, icon clicks, etc.
- Adding shortcut keys, autosaving features, text manipulation to any of your desktop applications is now possible!
- Latest version is fully compatible with all of Computer Concepts products!
- You'll be amazed at the real difference **Keystroke** makes to using your computer!

Here is just a few of the comments made by other *Archive* **Keystroke** owners...

"It's incredible, I'm never without it on my iconbar!", "Its easy to use and the most powerful program I've seen!", "**Keystroke** has saved my sanity on many occasions!", "Acorn should have put it in ROM with Risc OS 3!", "Congratulations on such an amazing product", "Thank you for the most useful piece of software since Impression itself."



The normal price of **Keystroke** is £29.95, but Quantum Software is offering **Keystroke** to ARCHIVE members (for a **very** limited period) at the incredibly low price of only £19.95 (including VAT and postage).

Yes, if you order **Keystroke** direct from Norwich Computer Services you will save **TEN POUNDS!**

Keystroke works on ALL Risc OS (v2 to v3.5) machines from the A310 to the A5000 & RiscPC.

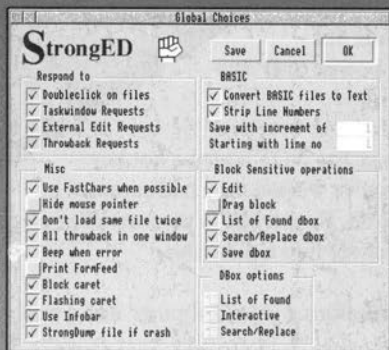
Site licences are also available.

Quantum Software, 35 Pinewood Park,
Livingston, EH54 8NN.

☎ 0506 - 411162

StrongED

Voted in the top three, Acorn User Awards 1994, for Best Programming Tool.



- ★ Interactive Search
- ★ Block/File/Multiple File Search/Replace
- ★ Separate Clipboard
- ★ Multiple Windows
- ★ Index Search
- ★ Procedure Search
- ★ Undo/Redo
- ★ Throwback Implemented
- ★ Save and Run (BASIC)
- ★ Save and Compile (C)
- ★ Support for BASIC, C, Modula2 and Pascal
- ★ Word Processing Functions
- ★ Auto-Window Wrap
- ★ Visible Tab/Ctrl
- ★ Interactive Help with StrongHlp (included)
- ★ Extensive Customisation
- ★ Multitude of Key Shortcuts
- ★ New Improved Manual

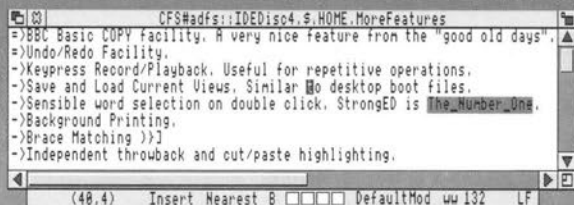
StrongED is a text editor to delight programmers.

It's highly compact (just 160K of memory), it's very fast, and it's full of features.

It's also highly customisable, and friendly to use, and will appeal to all users seeking an alternative to Edit.



"StrongED is an excellent alternative to other editors... ..and will make lots of users wonder how they managed without it" - Acorn User



StrongHlp is a powerful interactive help facility which provides an invaluable guide to all of StrongED's features, plus help with BASIC, SWI calls, VDU calls and, of course, StrongHlp itself, all supplied as part of StrongED.

Special Offer

Buy StrongED and you can purchase at the same time **ASM_Help** or **C_Help** for £10 each (inc. VAT and P&P), a saving of £5 on the normal price. These applications provide detailed and comprehensive help on ARM Assembler or C. Full details of these and all Stallion products available on request.

A German version of StrongED is available at the same price - but please add £3 P&P. In Germany, contact IOC, Schmidzeile 12, 83512 Wasserburg, Germany. Tel. +49 (0)8071 40739.

StrongED
£24.95 ex. VAT
plus
£2 P&P
(£31.32)

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Cheques or Eurocheques only in UK please.



STALLION
S O F T W A R E

Dates for Your Diary...

Music Open Evening

Tuesday 4th October 1994

NCS and Sibelius Software have teamed up for a Music Open Evening, with guest speaker John Rutter.

John Rutter is a well-known composer and choral conductor... and also a dedicated Sibelius/Acorn user and Archive subscriber. Amongst other things, he will be telling us about the impact of the computer on his composing. This evening event will be held in the King of Hearts (Centre for People and the Arts) in Norwich.

We are inviting anyone interested in the use of the computer for processing/printing music, to discover the powerful combination of Sibelius with the Acorn computer: music teachers; university and college lecturers/students; choral directors and choir members; local amateur and professional musicians, and so on.

Entrance will be by ticket only but we'll give more details in next month's Archive.

Acorn World 94

Friday 28th to Sunday 30th October 1994

Acorn World 94 is being held at Wembley, London again this Autumn. Watch this space for more information, as it becomes available.

NCS Open Day

Saturday 12 November 1994

The next NCS Open Day will be held at Eaton (CNS) School in Norwich. Once again, a wide range of companies will be displaying the latest computer technology, peripherals and software for Acorn computers.

Centre-stage, of course, will be the Risc PC and by then we should have the PC Card available to demonstrate and sell ! (!)

Advanced Basic Column

Paul Hobbs

Moving memory blocks

It is quite often useful to be able to move blocks of memory from one location to another, for example when inserting or deleting characters from the buffer of a text editor. At first glance, RISC OS appears not to have a call to achieve this, although it must be a technique that is needed by RISC OS itself. This apparent lack has probably resulted in countless hours of coding by third parties...

In fact, RISC OS provides the SWI Wimp_TransferBlock which is normally used as part of the RAM data transfer protocol to move blocks of memory from the workspace of one application to another.

What the PRMs don't tell you is that the source and destination task handles can be the same which means you can use it to move memory in the current task's workspace. In addition, the memory block to move does not have to lie on a word boundary (i.e. it is byte-aligned) and the source and destination blocks can overlap.

Disadvantages? It can only be used in a wimp program (because a task handle is required) and it is probably a little slower than a word-aligned memory moving routine although much faster than the usual FOR ... NEXT loop.

The documentation for the call is as follows:

r0 Handle of source task

- r1 Pointer to source data
- r2 Handle of destination task
- r3 Pointer to destination buffer
- r4 Length of buffer (number of bytes to move)

Assuming the task handle is mytask% and the buffer is 256 bytes long and at location loc%, the following code will remove n% bytes at offset pos%:

```
SYS "Wimp_TransferBlock",mytask%,loc%+  
pos%+n%,mytask%,loc%+pos%,256-pos%
```

and to insert n% bytes at offset pos%:

```
SYS "Wimp_TransferBlock",mytask%,loc%+  
pos%,mytask%,loc%+pos%+n%,256-pos%
```

You must be very careful to ensure that the buffer is large enough to contain all the data after the memory move as otherwise Basic workspace could be overwritten leading to all sorts of problems! The memory claiming routines given in Archive 7.7 p23 can be used to claim and extend private blocks of memory.

Making SWI calls

How are you supposed to know how to call a particular SWI? Well, you can look them up in the PRM (or the documentation for third party modules), find another program that uses them or buy StrongED from Stallion Software which includes extensive help on the subject.

One vital piece of information that you need to know is how to interpret the information the PRMs or documentation give you. Data is passed to the SYS command via the ARM registers R0, R1, R2, etc, so if the documentation says the SWI needs a window handle in R0 and an icon handle in R1, the command would be:

```
SYS "SomeSWI",window_handle%,icon_handle%
```

If the SWI requires (say) the address of a data block in R1 but nothing particular in R0 then the command would be:

```
SYS "SomeSWI",,address%
```

Note the double commas after the SWI name – this means we are not passing any data in R0. Without the extra comma, the address would be passed in R0 not R1. Finally, if you are told that data is returned in certain registers, you can use the TO keyword.

Assuming the SWI needs a window and icon handle in R0 and R1 and returns data in R3 the command would be:

```
SYS "SomeSWI",window_handle%,icon_handle%  
TO ,,,data%
```

After the 'TO', the data for R0, R1, etc, follows separated by commas – it is easier to write the command as:

```
SYS "SomeSWI",window_handle%,icon_handle%  
TO R0,R1,R2,data%
```

and discard the values returned in R0, R1 and R2. Of course, if you are told that a string is returned in R3 then you must use data\$ (or similar) to hold the returned value.

Printing again

I have received a letter from Byron Blessed of Solihull School who asks if it is possible to set up the printer module without loading !Printers first as this is very slow over a network. I don't have any experience of networks, but I would imagine that this is a common problem that somebody might have already solved (I hope!).

A quick look in the PRMs uncovered the SWI "PDriver_SetDriver" described on page 3-656 and associated information on page 3-668. PDriver_SetDriver requires two 256 byte data blocks which correspond to the choices set up with !Printers and I assume that !Printers makes this call to set up the module.

Therefore, it should be possible to write a simple Basic program to set up the data blocks and make the SWI call instead of using !Printers. So, am I on the right track? Has anybody written a small program to do this as there is at least one other person who would be interested (although it would doubtless be of general interest as !Printers loads slowly even from a hard disc).

And finally..

If you have any suggestions for topics that could be covered in future issues, I would be pleased to hear from you. My address is Paul Hobbs, Rheinpfalzstrasse 2, 85049 Ingolstadt, Germany. **A**

30% off

Personal Accounts Version 3

As a special **Summer Offer** available **only** to **subscribers of Archive Magazine** Apricote Studios in conjunction with Norwich Computer Services are offering the highly praised application **Personal Accounts v3** at only **£35** inclusive of postage, packing and VAT.

See **Archive** vol. 7 No. 11 page 65 and the August '94 issue of Archimedes World for reviews of Personal Accounts.

To take advantage of this offer, please send your order **direct** to Norwich Computer Services (**not** to Apricote Studios).

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LOOK
systems

Font Directory

A font filing system

Hundreds of outline fonts are now available for the Archimedes and new fonts are being produced all the time. This is all very well, but it does mean that using and managing fonts is becoming increasingly difficult.

What is Font Directory?

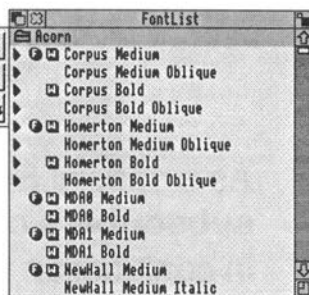
Font Directory is a radical approach to storing and using outline fonts within the RISC OS desktop. At its heart is a dedicated font filing system which provides the user with an unparalleled level of control.*

Easy-to-use

Using techniques pioneered by LOOKsystems, Font Directory allows you to install fonts at the click of a button without the having to restart your application.

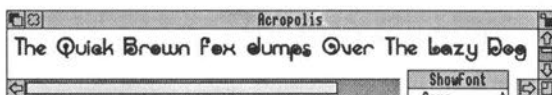
Just select the fonts in the FontList window and click on the 'tick' icon.

(If you wish, you can specify which fonts will be available on start-up and save favourite lists of fonts for later use.)



Font viewer

A preview window is available to help you decide which fonts you wish to install or just to remind you what a particular font looks like. If required, the text, size and colours used to display a font can be defined and even saved for later use.



Document scanning

The most powerful feature, however, has to be the ability to scan other applications' documents. When a document is dropped onto Font Directory, the fonts used will be made instantly available.

At last, no more 'font not found' errors!



FREE Trial Offer & SAVE up to £60 **

We are constantly being told that our font management system is one of those utilities that nobody thinks they need until they try it for themselves. Then, having used it once or twice, most people wonder how they ever managed without it! Perhaps not surprisingly, we are offering you the opportunity to try the software for free.

Just contact us at the address below and we will send you a complete pack. This can be returned within 10 days and you won't be charged a penny. Otherwise, you can keep the software and we will invoice you for £35 inc VAT and UK P&P.

Whether you decide to keep the software or not, we will also include some vouchers which can save you up to £60 on our existing product range. *This includes a £10 voucher which can be used towards Font Directory making the real cost just £25.*



LOOKsystems, 47 Goodhale Road, Bowthorpe, Norwich, NR5 9AY.
Telephone: (0603) 748253. Facsimile: (0603) 764011.

* A hard disc is recommended and you will need enough space to store all of your fonts. Most major applications and file formats are supported.

** This offer only applies to UK residents and expires 30th September 1994. Vouchers cannot be used in conjunction with any other offer or discount scheme and must be redeemed directly from LOOKsystems before 31st October 1994.

Online Media and the Digital Superhighway

Steve Bruntlett

Steve Bruntlett assesses the launch of a new company and the implications for interactive multimedia.

After a long time developing one of the best computers available, it's good to see Acorn receiving some high profile attention in the general computing press. Firstly it was the development of ARM Ltd, set up jointly with Apple, to develop and produce a set of world-beating RISC chips, ARM 250, 300, 600, 700 etc. Then there was the well-received Risc PC and now it's the development of another Acorn-based company, Online Media which was launched on July 6th.

The new company has been well-covered in the Innovation column in the Sunday Times for a couple of weeks. They have been reporting on the partnership of Online Media with Cambridge Cable which is to run trials in September using the first ATM (asynchronous transfer mode) system in Britain to develop home-based interactive video. If links with Oracle and Bell in America go ahead, it will be the first international system as well. ATM is used to send vast quantities of multimedia data, such as video, down fibre optic cabling at very high speeds – all part of the digital superhighway that President Clinton is known to have commented on from time to time.

Online Media is working with several partner companies to develop affordable interactive multimedia products and services for the huge market emerging from the development of the information superhighway. These include: Olivetti, Advanced RISC Machines Ltd, Advanced Telecommunications Modules Ltd, BNR/Northern Telecom, News International, MAI, Anglia Television, Oracle and Cambridge Cable.

From an education and home use point of view, the involvement of Anglia Television seems particularly exciting as they will be responsible for providing regional news bulletins, current affairs, weather forecasts and educational CD-ROM programmes covering science, history and geography. Buying individual copies of CD-ROMs may be shortly be a

thing of the past with the trend towards access to libraries of vast quantities of information becoming available in a variety of interactive multimedia formats.

So what are Acorn up to this time? According to the press releases from Acorn and Online Media, the main product seems to be a TV set-top box (STB) powered by four(!) ARM chips which will allow users in the trial around Cambridge access to video on demand i.e. to select a video or other forms of multimedia material whenever they want to see or use them. The STB will not only allow large numbers of users to watch the same video all at different stages and at the same time but, more importantly, will open up a wide range of interactive services.

The more mundane uses of this may be used for teleshopping but more excitingly, it could be used for interactive community links through teleconferencing. It could be used for home banking, interactive education and training, access to expert systems, (virtual reality test drives or visits to holiday locations? – the whole 'try before you buy' bit), home security and connection to Internet and Mosaic for starters. To explain this in a bit more detail and perhaps a bit more clearly for those of us who are still trying to figure out exactly what the digital superhighway is or might be, it may be worth including part of one of Online Media's information sheets, so here it is.

"Hot and cold running information – The advent of the Online Media STB, and the MPEG datastreams it handles, can be compared with the arrival of mains water to a house. Before, you could get water from the stream, but you were reliant on an intermittent supply, and the quality was variable – you took what you were given, when you were given it. Then you bought a bucket, so you could collect the water when you wanted and save it for later, but it was only a small quantity. Substitute broadcast video for the stream, and cassette video for the bucket and you have the situation as it is today.

Tomorrow you get mains water – as much as you want, when you want it, and you can control it exactly. The advent of MPEG digital data compres-

sion services and the STB to control them means that now our homes will have access to good quality video and digital audio down our existing telephone or cable connection, as much as we want and when we want it. Using a normal TV remote-control, you can ask for any film or computer game to be played on your television, or any recording to be played through your audio system, whenever you want it.

Furthermore, it's not just a one-way process (and this is where the water supply analogy starts to break down)! The STB is fully interactive. Wherever in the world there is something that can be digitised – film, audio, still pictures, data, software, even realtime video – you will see it, hear it and interrogate it, fully interactively."

All this has phenomenal implications for all aspects of society such as control of, and access and to, material, subscription costs, effects on traditional providers of software, video and audio services. What happens to record and video shops, for example, or libraries for that matter. Do we actually want or need all this information anyway? Some of it probably not, but much of it will be useful to the home and educational user and this is probably where the digital superhighway will have most impact, i.e. on the area between home and school which by the end of the century will become increasingly blurred. Some children will have better individual access at home to the teaching and learning materials available on this kind of system than they will at school, witness the phenomenal growth of Internet.

Schools will have to develop a changing role to ride the move from teaching to learning and also examine their role as facilitators rather than as information providers. Learning will develop through much more interactive structures than school can offer unless education starts using these kind of systems very quickly. But that would seem to require some serious funding... unless we believe the claims of Peter Talbot...

Peter Talbot, General Manager UK Education at Acorn Computers comments: "Acorn has announced its plans to realise the enormous potential of interactive multimedia and we believe Acorn is in the strongest position to ensure that education gets the best from this innovative technology. Acorn has undertaken the challenge to work with Online Media to develop a complementary environment and systems which will allow schools to use their current multimedia solutions with future products." This has implications for home users as well, who seem to be being promised an integrated interactive multimedia solution compatible with existing equipment.

The BBC have just had their mandate renewed until the next century but by the end of this century, television as we know it today will have changed out of all recognition. It will be much more interactive with 'users' rather than 'viewers' who will determine their own schedules rather than relying on set output, and will have rather more educational material available than at present. These are indeed exciting times – I just wish I lived in Cambridge! **A**

Small Ads

(Small ads for Archimedes and related products are free for subscribers but we reserve the right to publish all, part or none of the material you send, as we think fit. i.e. some people don't know what 'small' means and there are certain things, as you can imagine, that we would not be prepared to advertise as a matter of principle. Sending small ads (especially long ones!) on disc is helpful but not essential. Ed)

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Hardware: Floppy discs as new £15 per 50, A3000 1Mb RAM £20, WE external disc interface (for A400/1 and earlier) £5, Quest trackerball £12.

(If you have unwanted software or hardware for Archimedes computers that you could donate in aid of charity, please send it to the Archive office. If you have larger items where post would be expensive, just send us details of the item(s) and how the purchaser can get hold of them.) **A**

Gothic & Medieval Font Collection Pack II

Richard Hallas

About a year ago, the Datafile published a collection of period fonts and clipart by designer Tony Nash. The popularity of the first pack has prompted the publication of a second collection, Pack Two, which has a price tag of £40, all inclusive. (The first pack was reviewed in Archive 6.12, p. 78.)

Packaging

The pack consists of three discs, a manual, a single-user licence and a laminated reference card for one of the fonts, presented together in a plastic wallet with a colour-photocopied cover. The overall appearance is very similar to that of the first pack and, as with the first pack, the manual is interestingly presented, making imaginative use of the various fonts and clips to be found on the discs. It just seems a pity that it couldn't have been colour-printed, given the colourful nature of the clipart.

The first disc (which is contained in an envelope, the opening of which commits you to the licensing conditions) is the most important of the three, as it contains all the outline fonts. It also contains a copy of the public domain adaptation of !Chars, !NewChars2, and a few pieces of Celtic decoration and tile patterns.

Disc two contains more Celtic drawfiles – this time a directory of border designs and another of highly ornate, colourful capital letters. Disc three contains some more borders and a few assorted saints' heads and other drawings. There is also a directory of ten files, each of which illustrates the complete character set of one of the outline fonts.

Outline fonts

The pack contains six basic font families with between one and three members each, making a total of eleven faces in all. All have commendably full character sets and contain full hinting, although they are RISC OS 2 fonts, i.e. without kerning data, but still useable on RISC OS 3. The quality of the designs and drawing is generally very good, and many of the fonts are very detailed indeed – although this does mean that you have to use them at relatively large point sizes.

The Abbey fonts are black letter designs, but the 'Highlite' weight has an open upper half, which produces a very striking and attractive effect.

Amadeus is an extremely florid and attractive face based on an alphabet which was reputedly used in the Papal Chancery in the 16th century. For owners of the first Medieval and Gothic pack, this is an

outline font version of one of the draw-format fonts provided in that collection, but greatly extended and far more useful.

Bede has three members: regular, bold and tooled. They are basically of an uncial design, and the tooled face is particularly attractive.

El-Cid also has three faces: regular, tooled and swash, and is based on a Spanish gothic script hand. Again, the tooled face is very attractive but it is the swash face which is particularly interesting. It provides a total of 18 swashes which can be added simply by entering the character code on the numeric keypad. This is a nice idea which works well, and a reference card showing the swashes and codes is provided.

Kells is based on text in the Book of Kells, and is intended to be used in conjunction with the Celtic draw-format capitals provided on disc 2.

Scriptoria has a particularly hand-drawn feel, and is based on body-text lettering of early manuscripts.

Altogether, these fonts are very good quality and provide a good range of styles.

Clipart

The clipart in this pack follows along the same lines of that in the first pack. There is a significant number of border designs, along with other intricate designs which could conceivably be used as parts of borders or on their own. In fact, some of the fonts provide unusual bullets and other abstract designs which could in themselves be used as borders or for the purpose of breaking up sections of text.

Several attractive repeating tile patterns are provided, both on their own and sometimes as part of other pictures. The remainder of the clipart consists of knots and other fairly abstract designs, a few saints' heads and faces and a few assorted monks. The clipart seems well drawn, and is very authentic-looking. It would have been very easy for the designer of the clipart to use the computer to make geometric shapes such as knots, tiles and repeating

Abbey

Abbey Highlite

Emacius

Bede

Bede Bold

Bede Tooled

El-Cid

El Cjo Swash

El-Cid Tooled

Kells

Scriptoria

patterns look very mathematically precise, but this has been avoided. The small degree of unevenness which has been introduced into the drawings adds a more authentically human quality.

As with the first pack, many of the drawfiles contain a large number of shapes, and you are expected to ungroup some of the pictures and use the parts you want. Although slightly inconvenient, this is a good approach for two reasons. Firstly, it means that space is not wasted on the discs by unnecessary duplication, and secondly, it shows the elements in use, which is far better than just providing lots of components and expecting you to know exactly what to do with them all.

Conclusions

If you liked the first pack, you'll love the second. It's basically more of the same, but better quality. Whilst the first pack had possibly a greater emphasis on the clipart than the fonts, the reverse is probably true with the second. The fonts are well-made and interesting, and many of them are quite unlike anything else currently available (particularly Abbey Highlite). Also, there are almost twice as many of them compared with the first pack (11 rather than 6). I did feel that the ten font printout files were rather a waste of space (ten because El-Cid Swash is not included among them) and could more usefully have been included printed in the manual. Aside from that, though, I have few criticisms, and recommend this interesting package. **A**

Multimedia Column

PR and multimedia

Many organisations are becoming increasingly aware of their public image – this is even the case now with Schools. With the increasing choice available to parents, it is vitally important that schools project a good image. The relative cheapness of DTP has led to many schools producing glossy brochures which they distribute to the parents. What has this to do with multimedia? Well, I was asked to come up with some ideas to help a local primary school to promote its image and immediately thought of multimedia.

What about the cost?

With budget restrictions within all schools, the cost was going to be a big factor. In a small rural primary school of only 120 pupils, whatever I did was going to have to involve little or no expense. There were a number of times during the next few months when many of the parents were coming to school and the obvious solution was to produce a self-scrolling display of school activities. The school has an A3000 and an A5000 with a CD-ROM, plus a selection of BBC Masters. They also have Genesis along with an Oak Recorder. After talking it over with the Head, we decided that the pupils should select what they wanted to go into the display but overall editorial control was to be retained by the Head!

Collecting the resources

The pupils were challenged to design pictures under various headings and also a School logo. They could either use Splosh or pencil and paper. Text was also written by the pupils and saved as Edit files. I then took a video camera into School and, using my own A5000 along with an HCCS Vision Digitiser and !ChangeFSI, I was able to produce a good number of static images. Photographs were also scanned in, along with some of the pupils' work.

The storyboard

Once all the resources were collected, along with one or two pieces of commercial clipart, we constructed a rough outline of how the display would scroll. We wanted to include as many pictures of the children as possible but also certain 'ads' that the Head wished to get over to the parents. It then became an

easy job to assemble the resources into the multimedia program and add appropriate sound samples onto the pages and set up the scrolling display. It was set up on the A5000 in the main entrance hall – but then we realised that we needed to attract the parents' attention as they came in. After a little thought, we realised that using CD-ROM to play an audio disc would provide the answer.

The proof

The final version was put on display at three parents' evenings and many people commented on a very professional-looking display. The governors were also impressed and released £400 for extra hardware and software for future displays to be done 'in house'. One parent even asked the school how it was done and what sort of PC his company would have to get to run it on! I have since shown this to a number of schools and all have been impressed.

The decision to use Genesis was driven by the fact that the school had a copy, but since then I have converted it to both Magpie and CableNews. The monthly disc contains a Magpie version but all three versions are available through the Swap Shop.

The Swap Shop

I have been inundated with requests for items from the swap shop over the past two months with many favourable comments on the column and I just like to say thank you to those who have written. I have had letters from afar away as Germany, New Zealand and Australia, and I hope to set up some sort of distribution of the swap shop items in Australia so that overseas readers will be able to use the local contact and save the expense of writing to England.

This month has also seen a number of firsts. Christopher Jarman has sent me three rather nice Optima examples aimed at middle primary children – these will be added to the catalogue. I have also had an advance copy of a Key Author file which isn't quite finished yet but which will be added to the catalogue in the next few months.

I also have an apology to make. I announced in the last column that Man in Space was ready, when in fact, I still had a few bits to finish as I was writing

the article, but due to my own stupidity I couldn't get the database within the application to work properly. I have now solved the problem and have sent out copies to all the people who requested them. I have also finished the Advanced WIMP Tutor in Genesis format and the Magpie version should be ready by the time you read this. Paint Tutor is also now finished and all the above have been added to the catalogue.

I have also updated the catalogue, but to make it easier for me, the catalogue will, in future, only be available in Magpie format – a reader is supplied with it so that anyone can read it.

Hints and tips

• **Genesis Professional** – One reader wrote to complain that he was getting repeated crashes when trying to replicate frames. I must admit, I was unaware of the problem, so I went back and tested it out. The gist of it is this: if you open a blank page and pull out a frame and then replicate it, the program crashes. Now when you first pull out a frame,

by default it is a WORD frame, and if you try and replicate it the crash occurs as Genesis will not allow you to replicate this type of frame. The cure is simple, just convert the WORD frame into a TEXT frame by clicking in the frame itself, then you can copy it as many times as you like.

• **Magpie** – Some months ago, I issued a challenge to Magpie users about making a scrolling binder with continuous music. I got no replies to this challenge, but my solution was a bit of a cheat. Using my CD-ROM, I set up an audio CD running and then loaded in the Magpie scrolling demo which had no sound effects! I'm sure there is a better solution so I will keep the prizes until someone comes up with a better one!

The End Bit

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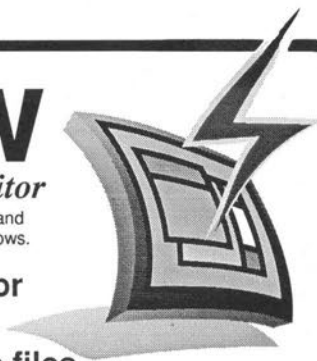
Acorn User
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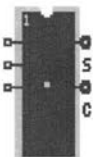


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Using a Notebook PC with an Archimedes

Stuart Bell

About a year ago, I was approached to act as a newspaper reporter for one week a year, reporting for the *Methodist Recorder* on the annual Methodist Church Conference which meets in different locations across the country every June. My particular task would be to produce the *Conference Digest*, a 12-page 'pull out' published about three weeks after the Conference ends and which details every decision made by the Conference. As those twelve pages are tabloid newspaper size, and as my job would be to record decisions rather than debates, this was clearly an information-processing task, rather than a journalistic one. As such, it was a clear candidate for some careful use of technology to minimise the work involved and, in particular, the amount of time the task would take outside the actual week of the Conference. This article charts my investigation of the technological solutions to the problem, and my experiences in using 'the solution'.

Option 1: An A4 notebook

Clearly, with unlimited resources, this would have been the ideal solution. Using familiar software, and transferring material between it and my A310 via floppy discs, Impression II would have provided all I needed. But resources aren't unlimited, and I could neither afford an A4, nor expect one to be purchased for me for one week's use a year. Ahh!

Option 2: A Mac or PC laptop

A visit to the printers of the newspaper revealed that they use a mixture of PC-compatible and Apple Quadra machines, and that they could accept ASCII text on 720Kb PC format discs with no difficulty. A PC or Mac laptop seemed to be the obvious alternatives. But, again, the cost seemed rather high for the use envisaged, and I didn't want to have to face the steep learning curve of running full-blown WP software on either platform. I knew too, from all the comments in Archive, how unfriendly Windows 3.1 and System 7 are, compared with RISC OS! It was becoming clearer that what I wanted was a 'text acquisition' machine, not a high-powered laptop. Furthermore, battery life on full-sized laptops seemed to be less than ideal.

Option 3: A palmtop

The availability of the Acorn-badged Psion 3 offered an obvious solution, but one that was soon rejected because the keyboard size is not really ideal for heavy text-bashing. Also, I didn't need the ultra-compact size which it offers. The same could be said of a range of palmtops on the market. I was tempted by the Psion MC400 which Tord Eriksson discussed in Archive 6.11, p.59, but rejected it as being too non-standard, and hence limiting the options for software to run on it. It could well have provided an alternative solution to my problem, however, and Tord certainly liked it!

Likewise, the Amstrad NC100 was considered, but rejected because of limited storage facilities without expensive PCMCIA cards. The NC200 with a 720Kb floppy disc was better in that respect, but rather expensive for a Z80A-based machine with the same problems of being tied to software supplied by the manufacturer.

After three months of investigating the market and considering the job in hand, I'd come to the conclusion that I wanted a machine no larger, and preferably rather smaller, than a standard laptop, costing no more than about £400, with a reasonable battery life, PC or Mac compatibility to keep the software options open, and with some form of disc or non-volatile storage to keep my valuable text safe.

Option 4: A PC sub-notebook

Early in my search, I'd noticed the Olivetti Quaderno, an A5-sized (i.e. 8" x 6" x 1") PC compatible machine with an 8086 processor, 1Mb of memory, a 20Mb hard disc, and a slightly squashed keyboard. At the time, its cost of £800 put it out of consideration. However, largely because of its relatively limited CPU power (forget Windows 3 or serious DTP) and small keyboard, it was never a commercial success, and was soon reduced to £400 at your local Dixons. When a small advert in a PC magazine listed a stock clearance at less than £300 + VAT, the solution to my problem seemed obvious. The final order, with leather case, spare battery, P&P and VAT came to £402.38 – stage one of the project completed!

Stage two was to identify how to use the machine in conjunction with my Archimedes, on which any text-preparation before and after the Conference would be done. Impression II would be used to produce printed output in newspaper-like columns to tell me how 'long' my text was, and it would produce the ASCII text on a DOS format disc for the printers. (Supplying PostScript file images of the whole pull-out ready for typesetting would be the most direct method of producing the *Digest*, but also the most adventurous, and potentially most traumatic!) The two issues which I had to address may well be applicable to other Archime readers, so I'll discuss them in relatively general terms.

PC<->Archimedes communication

The obvious methods are disc and serial links. The former was not possible for me, as the Quaderno does not have a floppy disc drive. With the machine came a serial link and some software to run on a desktop PC to make the Quaderno's disc look like an extra disc for the desktop machine. The latter would not be much help and the serial lead needed an adaptor to make it usable. As so often, Archive came to the rescue. Tord Eriksson's article referred to an earlier one by Richard Oldman (6.1 p.57) which described an adaptor which worked first time with the Quaderno - thank you, gentlemen!

As regards serial software, to send binary program files from the Archimedes to the Quaderno, I wrote very simple file transfer programs in Basic on the Acorn, and the excellent QBasic on the Quaderno. After a few problems, 100Kb+ files transferred faultlessly. To recover text typed on the Quaderno back onto the Archimedes, I use an ancient version of ArcTerm, and the CTTY facility (change the 'console' device to the serial port) under DOS on the Quaderno. It's basic, but it works!

Once the text files are on the Acorn machine, they need converting from DOS-style text files to Acorn ones (and, of course, the ASCII files for the printers need a reverse conversion). John Winters' excellent !Convert utility (again, thanks to Archive) accomplishes the task simply. If anyone wants a copy of my inelegant Basic routines, drop me a line: Stuart Bell, 23 Ryecroft Drive, Horsham, West Sussex, RH12 2AW.

PC text editors

The Quaderno's display is both small and not backlit. 80 columns are legible in the right lighting conditions but I knew that such an environment could not be guaranteed. Enter B-Edit, a shareware product designed for visually impaired users, which offers large-character displays on any PC screen. I use 53 columns per line, but up to 12-per-line is possible. It's a pretty clever text editor, allowing manipulation on up to two files at once, with a spelling checker, and a good range of editing functions. It's no WordPerfect or Wordstar, power-wise, but more than enough for my needs. Also, the author in the USA responded by return to a problem that I encountered. Registration is \$29.00. If you'd like a trial copy, drop me a line.

Conclusions

Despite what the PC magazines may imply, you don't need a '486 running at 100MHz with 32Mb of memory and a huge hard disc to run simple laptop applications. The trailing edge of PC technology may offer a cost effective solution. Despite the unpleasant nature of DOS, it's arguable that it's actually better when run on the kind of simple 1Mb machine for which the first versions were designed than in its latest incarnations which demand all sorts of memory management tricks, and still don't make use of the power of the latest 80x86 processors.

Secondly, Archimedes machines and PC compatibles can work well together, with a little effort. After all, ASCII data is ASCII data, whatever machine it was produced on. Exotic Ethernet connections running at many megabits per second may be essential for high volume everyday use, but the traditional serial link works fine for non-demanding applications. Indeed, I run mine at 1200 baud so I can read the text as it is transferred!

Finally, with PC compatible laptops and notebooks falling in price, we urgently need a new lower cost Acorn of that type. The latest generation of machines are sub-A4 in size, and cost less than £1000. Since ARM3s are supposed to be so cheap, why don't Acorn produce an A5-sized portable Archimedes, rather like the Quaderno which, after all, was made by Acorn's parent company, Olivetti. **A**

Would the person who sent me an article about using an NC100 please contact the office - we have mislaid your name. Sorry!! Ed.



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Fireworkz for Windows will be available in July at the special price of £99. If you already have the RISC OS version you can add the Windows version for just £50. If you have Acorns and PCs you can now work on your files on either computer - you can even use the same floppy disc. Fireworkz has the same user interface and menu structure whichever platform it is running on. If you're thinking of buying a RISC PC and want true cross platform compatibility and integration -

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PD Column

David Holden

Libraries merge

One of the reasons why there has been a long gap since this column last appeared is because APDL has recently 'taken over' the Data Stream. For new readers (or those with short memories – it would be understandable in view of the long delay since I last wrote) I actually run APDL, and trying to merge the two libraries has been such an enormous undertaking that I haven't had much time for anything else.

If you are a regular Data Stream customer, you can still order discs from the 'old' catalogue but please send them to the APDL address which you will find at the end of this article.

I have previously remarked on the demise of libraries and a couple of years ago the numbers were diminishing rapidly. Since that time some new ones have appeared and the situation is looking more healthy.

So far, PD and Shareware for Acorn computers has tended to follow a different path from those in the Amiga and PC worlds. The large numbers of small libraries which abounded for the Amiga a few years ago have almost entirely disappeared to be replaced by a couple of major players and a few smaller ones run by dealers. These 'dealer libraries' almost invariably just sell repackaged material obtained from the major libraries. Because these all 'pool' their material, there isn't much variety for customers and the authors have very little influence. There are some very good programs available but I would hesitate to call the situation healthy.

The PC Shareware scene has been transformed by CD ROMs. Glancing through PC magazines from a couple of years ago, you would see pages of adverts from Shareware libraries. The majority of these have now vanished. I must admit that I don't mourn the passing of most of them. People who have a serious interest in PC Shareware, now tend to buy their programs on CD ROM. Assuming that you have a suitable drive (and you can buy one for just over £100 for a PC) this is a very cheap way of getting a lot of programs for a comparatively small outlay, especially if you don't mind obsolescent versions

because out of date Shareware compilations are quite cheap. This has obviously reduced the turnover in individual discs for most libraries but the larger ones now sell CDs to compensate.

I don't think that the future for Acorn PD libraries will be in either of these directions. My experience of Archimedes authors is that they are far too individual to allow a few large libraries to dominate as has happened with the Amiga. Many are now writing major Shareware applications and therefore insist upon controlling distribution of their programs to ensure that obsolete versions are removed from circulation as quickly as possible.

It will probably be a very long time before we see CD ROMs of PD and Shareware for the Archimedes, although 'a long time' in computer terms can be a misnomer. If you remove all the real rubbish and 'ported' artwork, I doubt if it would be possible to find enough good material to fill two complete CDs. In fact, because of its very much smaller user base, I think it extremely unlikely that Acorn Shareware and PD could even begin to approach the scale attained with the PC. Combine this with the extraordinary high price of drives for Acorn computers (although I expect this to change soon) and there is little likelihood of PD programs appearing on CD in the immediate future. However, if major software houses start producing large programs on CD (especially games, as with the PC) at sensible prices, the use of CDs will increase and this could alter very rapidly.

I say 'at sensible prices' because, so far, the prices of those few which have been released have been extortionate. I know that the people who produce them will complain about the high cost of production, economies of scale, etc, but the fact remains that most seem to cost £80-£100. Looking through catalogues of CDs for the PC, I can't find any, including a few multi-disc sets, that cost even half this. If CDs are to become popular on Acorn machines, they must be sold at sensible prices, otherwise, no-one will buy the drives (at whatever price). If this means that the people who produce them must make little or no profit at this stage to

stimulate the market, I hope they will have the wit to do so.

The introduction of the Risc PC (which brings its own headaches for libraries) adds new impetus to the possible move towards CDs. Acorn have made it clear that they regard the future for their computers to be in 'multimedia'. I hope this doesn't mean that they will forget the thousands of enthusiasts that have supported Acorn since the days of the Atom. Without them there wouldn't be an Acorn Computers today and it is these same enthusiasts who both create and support the PD and Shareware network.

These rapid changes make it very difficult to predict what is likely to happen. What seems to be emerging is that there will soon be only a handful of major libraries, say three or four, and lots of smaller ones.

This will probably be a healthy development. We need large libraries to provide support for authors and a general 'baseline'. It is only the large libraries that can afford to invest in new equipment and all the other things necessary to provide a 'professional' service to both authors and customers. Briefly pausing to tap out a few rough figures on a calculator, it would seem that I have well over £6000 worth of computer hardware within reach as I'm writing this, plus still more in another room, and a very large part of that is dedicated to running APDL rather than for my personal use.

What would be very bad is for a small number of libraries to dominate and 'squeeze out' the others, either by accident or design, as has happened with the Amiga. However, I don't think this is very likely. All of the the major libraries are very disparate, and are run by single individuals or small groups so they all have their own 'identity'. There is comparatively little direct interchange of material between libraries. Personally, I think this is a good thing. Most authors prefer to communicate directly rather than send a program to one library which will then circulate it to all the others. This keeps libraries and authors in direct contact. Because the Acorn world is comparatively small, this works well. It simply wouldn't be possible with PC libraries.

Another reason that I think this is a good thing is because it still leaves plenty of space for small libraries. If there are a few larger ones to provide

stability and a repository for the collected works of PD authors, the fact that smaller libraries come and go (as they tend to do) won't have a major impact. If this means that some of the newcomers grow to such an extent that one or more of the larger libraries get knocked off their perches, that too may be healthy.

Another competition

It had always been my intention to run another PD/Shareware competition but general lack of spare time has delayed it somewhat. Hopefully, by the time this appears in print, I shall have sorted out the majority of the Data Stream discs and transferred most of my software over to my new Risc PC, so I think it's about due, and if I wait until I'm sure I have the time it will probably never happen.

I will be offering prizes for the best new work or major upgrade of an existing PD or Shareware program. I don't know exactly what the prizes will be or how many – that will depend upon the number and quality of the entries, but I have over £200 set aside for this purpose and I will add to this amount if I consider the entries warrant it so it will certainly be worthwhile.

Don't just send me your program(s). If you are interested, send a blank disc with a self-addressed label and a stamp for return postage to me at the address at the end of this article. I will return your disc with a copy of the entry conditions plus a lot of useful information about the sort of things I will be looking for. Without this, you might find your program disqualified or you might waste a lot of time changing things that I regard as unacceptable.

As before, I will leave the 'closing date' flexible to allow people whose programs are still just in the idea stage to put them into practice.

Desktop 'sillies'

I'm sure that most of you will have seen some of these at one time or another, from the 'original' Wanda to the amusing Great Train Robbery. So far, I have always tended to concentrate on more serious matters in this column but, for a change, I have decided to offer something a little more light-hearted. I have therefore put together a special disc of a selection of programs that do all manner of strange and amusing things to relieve the tedium of

running all those heavyweight applications. Things that pop up, zoom about, eat your windows, and generally brighten your day and all of which are guaranteed to do absolutely nothing useful.

For a copy of this disc send £1 or four first class stamps to me at: 39 Knighton Park Road, Sydenham, London, SE26 5RN. **A**

Flashback

Ron Page

Ron is a student at Eaton (City of Norwich) School and has been on 'Work Experience' at NCS for the last fortnight. One of his 'experiences' has been to write a review of an Acorn game...

The history

In late 1993, US Gold released a Delphine game on the Sega Megadrive which was to change the standard of animation, atmosphere and depth of play on all gaming platforms. That game was Flashback. Now after one year and five different conversions, this classic piece of gaming art has made the it to the Acorn Archimedes series.

As a PC owner(!), I was expecting a good solid conversion seeing as this is a Delphine games but nothing could have prepared me for what I was to find. This conversion is absolutely stonking – it is of the same standard as the PC version, possibly better!

Is it live? Or is it Flashback?

As mentioned before, one of the reasons for Flashback selling bucket-loads on every other platform was the animation, at 24 frames per second – the same quality as the majority of cartoons. Couple this with the incredibly moody graphics and an overwhelming sense of realism and you get one of the most graphically pleasing games. One other aspect that made a subtle but substantial difference is the minute detail, such as the shells (which are 2 pixels by one pixel in size) being ejected by the gun when fired, the flickering monitors... I could go on about this all day!

The cinematic sequences have made it through the conversion process along with a few new ones to boot! Unfortunately, there has to be a price. There is a really annoying glitch at the end of the sequence when the screen colours go weird for a second – still, the sequences can be turned off so it isn't that bad.

Ooer! This is spooky!

In the later Lucasfilm games on the PC, such as X-Wing, and the new Delphine games, a sonic system is used to change the tempo and style depending on the situation. For example, when you come across a guard, the music becomes distinctly heavy. Incidentally, this system is called iMUSE by Lucasfilm, who pioneered this system in Monkey Island 2, I believe.

The echoing of your gun and all sound effects sound as though they have been sampled and then modified, leading to a tremendous sense of reality. There are only a few games that I can think of that can top this and that would be those VR machines that cost £15,000 and which can be found in an arcade in a large city!

This is all fine, but how does it play?

A game can look like a dream, but no-one wants a game that plays like a heavily drugged donkey, I'm pleased to say that this game is more addictive than most types of illegal drugs, so prepare to become a very lonely person!

The control method is awkward at first but once you get used to it, it is actually quite good and instinctive. (But why the space bar is used only to draw the gun, instead of firing it, escapes me.) One problem with this game being so 'in depth' is that, for very minor parts of the game, it tends to get repetitive, tedious and in some cases frustrating. However, as I said, this only occurs in very small doses.

Conclusions please

If you buy only two games a year, make sure that this is one of them (the other being Sensible Soccer). This is one of the best games available on any machine not just the Archimedes! However this is 'just another platform game'... but a Ferrari is 'just a car', right? Now, if you don't want to look like a donkey on steroids, pick up the 'phone and dial 0603 766592 (This is the number for NCS, but you

know that anyhow!) and say in a frenzy "I'm not a donkey! Send me Flashback for the ridiculously low price of £26!" Or failing that, US Gold sell it for £27.99.

What can it run on?

Flashback will run on any Archimedes under RISC

OS with 740Kb of free RAM and around 2.5Mb of hard drive space (although it can be run from floppies!) a high density disc drive† and, of course, it must be interfacing with a human or any other sentient life form! **A**

†US Gold say that you can return the high density discs and they will replace them with 800Kb discs.

Games Column

Dave Floyd

Welcome to another saunter around the Archimedes games world. I was very interested to see in the August edition of Archimedes World, that Mike Williams appeared to share much the same view on the future of the Archimedes software industry, following the Risc PC's release, as I expressed in my last column. Only time will tell, but I sincerely hope that we are both wrong.

I was also interested to receive a couple of letters which picked up on my point about the Acorn press praising every Archimedes games release and tried to make a connection between that and advertising revenue. What a cynical bunch you are! I'm shocked and, if I may quote Michael Dobbs, "You may very well think that. I couldn't possibly comment."

I feel that a far more likely cause is lack of time spent on what many see as *just* games reviews. In two recent reviews in other magazines, the reviewers proudly announced they had spent three and four hours, respectively, playing the games before writing. Forgive me if I'm not impressed. Three or four hours may have been sufficient back in the days of Space Invaders, but nowadays it is barely enough to scratch the surface of any self-respecting release.

My last two games reviews for Archive, Diggers and Lemmings 2, were each preceded by at least thirty hours of playing. I am sure that most others who write reviews for Archive are equally diligent, if not more so, because of the voluntary nature of the task and long may it continue to be so.

Special offers

There can surely not be an Archimedes games player left who is unaware that this summer has seen

a plethora of special offers on games originally released a couple of years ago. I am also sure that many, like myself, saw this as an ideal opportunity to fill in some gaps in their games collections. Sim City and Heimdall were the two that particularly appealed to me.

Sim City

So much has been written on Sim City that it would be superfluous to go into too much detail here, but basically you play the part of a newly-elected mayor. Depending on the scenario you choose, this could be of a small town that wants to be big or of a specific city with existing or imminent problems to be solved. You can build, bulldoze and try different strategies to reach your specified goals, and if you finish all the provided scenarios you can then create your own. It's great fun and, if used in conjunction with the teacher's guide that comes with it, it could also have some educational value. The only real down side to this game is the user interface which, for those of us used to RISC OS, is about as intuitive as Windows File Manager. Fortunately, the game is good enough to make perseverance worthwhile.

Heimdall

Heimdall is a game that I would have bought on release, if I had not been put off by playing the demo that appeared on a magazine cover disc. For anybody else who made this mistake I can only say, buy it now. The game is of the role-playing type and, along with your selection of warriors, druids, wizards and others, you must explore many different lands in order to find certain treasures of the gods which have been scattered around three worlds. Much exploration will have to be done and many

foes overcome with your trusty sword before this game is finished. Me? I'm still stuck in the first world but the fact that it is taking up a much needed 4Mb of my 20Mb hard disc at present is probably the best testament I can give to Heimdall.

Premier Manager

Finally, having taken the plunge and mothballed my copy of League Division One, which I converted over from the BBC B, in favour of Premier Manager from Gremlin (£24 through Archive), I thought I would finish up by giving my initial impressions of the first football management game to be released on the Archimedes. The package consists of one disc, a code wheel which provides protection against piracy and an all-formats-except-Acorn manual along with a four-page addendum sheet in English and German which notes the differences. The addendum sheet contains at least one spelling and one factual error in the same sentence as each other. There may be more but I can't read German.

Inattention to detail is not confined to the addendum sheet, either. Once into the game, the mis-spelling of Yeovil Town was another which I feel should have been noticed by somebody before release. The manual states that all cup competitions are played to their real-world rules. Why then are the European and Cup Winners Cup finals played over two legs in the game? Football purists who claim the game was better in the sixties will be pleased, however, to see that the League Cup final has also reverted to its original two-legged format. Play-offs are a feature of each of the leagues, even the Conference, which are once again incorrect and, to rub salt into the wounds, the play-off matches are decided wrongly. Of the four teams who qualify for the play-offs, the first games should be 1st v 4th and 2nd v 3rd. In Premier Manager, 1st plays 2nd and 3rd plays 4th. Setting aside the Conference play-offs, which could be termed a 'feature' of the game, all these other errors are shoddy and should have no place in a final release version.

Another final point is that the quality of teams appears to bear no relation to their results against each other. In both divisions that I have played in so far, the teams at the bottom are far stronger than those at the top. This was really brought home in my

first season of playing, in which the League Cup Final was contested between Crewe and Port Vale. The FA Cup Final that year, the crowning point of the domestic season, was held between those renowned footballing giants, Telford United and Northampton Town. (It could be the first final in living memory to have tickets freely available on the gate, assuming you had been unfortunate enough to miss the ticket touts en route, trying to sell you one for half price!)

But this is not real life. It is a game, and if you can put the above into that context, and assume that Gremlin have got it right and that we are all involved in some kind of virtual reality, it is actually quite absorbing and wholly time-consuming – if football games are your kind of thing. You can play it inside a desktop window or allow it to single-task with instant access to the desktop when you need it. It will run in any screen mode that suits your monitor configuration but 256 colours are recommended.

The ideas behind the game are excellent and you are involved in all aspects of running the club from playing staff to financial dealings such as pitch advertising and bank loans. I would have liked the coaching staff side to have been more personalised and to have been able to see the league tables from all six divisions rather than just the one my team was involved in, but these are amongst the reasons that Championship Manager is widely regarded as the best on other formats. Realistic it certainly is not, but neither was Football Manager, and that was the best selling football management game ever. It is also difficult, and it will certainly take some time to win every trophy on offer, although I do not consider this to be a bad thing.

I do like good football management games, and I am totally absorbed by this one, in spite of everything. That the errors and inconsistencies listed earlier do not completely ruin Premier Manager are a tribute to its design – I just find it a pity that it was released like this and would strongly urge Gremlin to release a rectified version quickly and offer a free or cheap upgrade to existing users. Alternatively, perhaps they would be good enough to convert and release version 2, as has been seen on other formats for a long while now, maybe offering an upgrade path. If not, then maybe somebody would be good enough

to convert Championship Manager for us or release a home-grown football management sim, thereby creating some much needed competition into the marketplace.

Any comments relating to this column, or any other games-related subject should please be sent to Dave Floyd, c/o PO Box 2795, London NW10 9AY. **A**

Pocket Book Column

Travel notes

The Pocket Book has been to the Aeolian Island of Lipari, off Sicily, and back, and has proved an excellent travelling companion and talking point. I can particularly record that the "fiendish Solitaire" I mentioned last time (as a game picked up from the "3-Lib" collection of shareware software originally designed for the Psion-3) filled many boring moments in trains and waiting rooms and even distracted me from wondering where John had got to and whether he would be back before the train left. I have only succeeded in getting it out once in all the many times I have played it, and would like to thank its maker, Dave (Florish? – he gives no address and asks no licence fee) for hours of entertainment.

I also gained the satisfaction I expected from another piece of software from the "3-Lib" collection, John Whiting's Outline, which cleverly enables the user not only to make an ordered set of headings, but also to write associated notes; to have this quite sophisticated thinking aid in one's pocket is immensely valuable. He has also applied some of the Outline techniques to the structuring of joblists in a piece of software called ToDo, much more complex than the facility in Schedule. This would have saved me many mini-breakdowns in my working life, though it comes too late for me now that I'm retired.

A hardware problem

We continued, as reported earlier, to have problems with intermittent functioning of the printer (the BJ-10SX) which we acquired to connect to the Pocket Book. Finally, we have made a mental link with another problem: the fact that when the Pocket Book is theoretically connected to a power supply to conserve batteries, the little green light which shows that mains power is on keeps going out. Jiggling the lead at the Pocket Book socket temporarily restores power, but unless this is done frequently, particu-

larly in a slightly unstable situation, the light soon goes out again.

Since I frequently use the Pocket Book on my knee while sitting in bed – my favourite place of work – such instability is something I need the hardware to be able to cope with. Our suspicion is that the problem with the printer is a similar one: that the lead which links Pocket Book to printer does not sit securely at one or other end. This problem needs to be addressed by the hardware manufacturers; meanwhile, any advice or shared experience would be welcome.

Dunce's corner

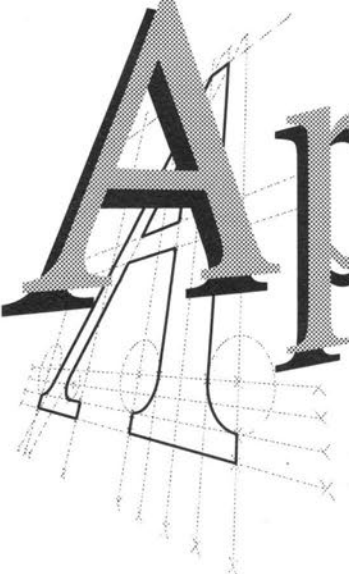
John of the far side of the bed wants to stand in the DC this month. He writes: "We keep an old Amstrad portable in the Aeolian Isles. Accordingly, we wanted to be able to use the A-link to back-up files between the Pocket Book and the Amstrad. A source close to Psion let us have RFM, a program which has been written to enable the Psion drives to be addressed as MS-DOS drives from the host Amstrad. 'Psion have not, and may not release this program', means Psion neither supports nor maintains this program, and you will get a thick ear if you ask them about it.

We shall be getting a Risc PC by next column so I can report on RFM as soon as DR-DOS comes, but if anyone within easy reach of Victoria Station has experience with PCs and serial ports, I should like to try out this useful little program."

Endnote

Is it midsummer torpor, or the fact that I mentioned I was going to be away? This month, the whole short column has been written by either my partner or myself, because there have been no letters. Please start them flowing again; there must be lots more Pocket Book problems and pleasures out there to communicate. **A**

Apollonius PDT



Computer Aided Design

Spartan Simplicity

Olympian Power

Apollonius PDT is probably the easiest to use CAD system there has ever been, and yet has comprehensive geometric construction facilities, combined with realtime interactive parametric geometry - just drag a component and the entire drawing and its dimensions automatically adjust to suit. Can be used for technical drawing, mechanical simulation, animation and much more.

Apollonius PDT costs £150 +VAT. Upgrades from Oak PDT and WorraCAD £75 +VAT.

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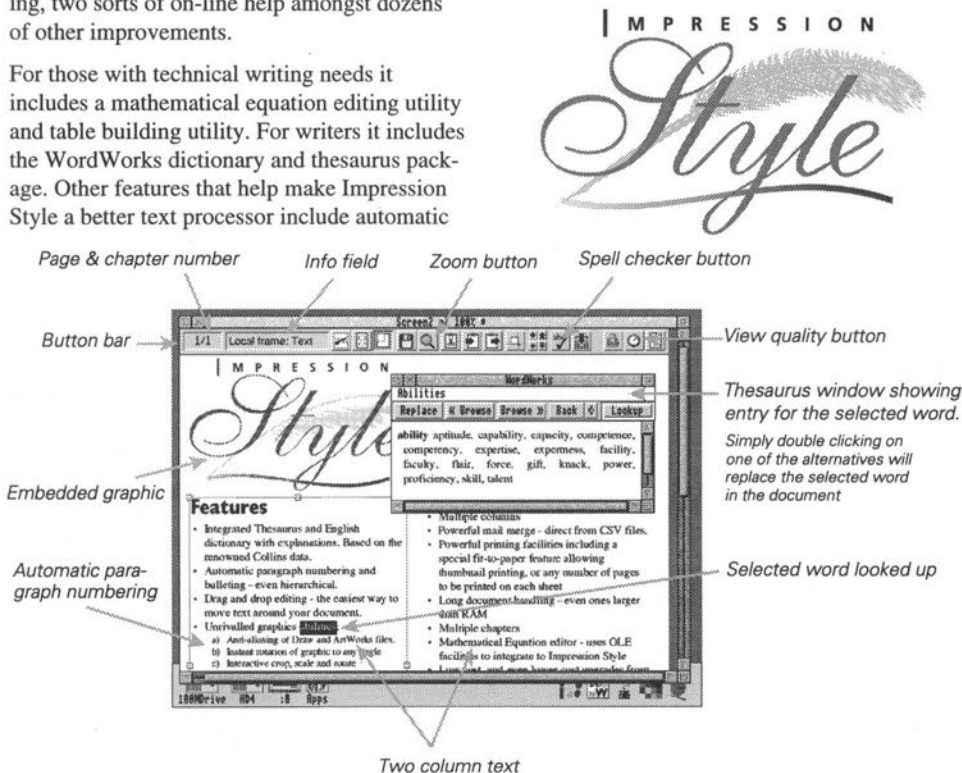
Does your writing have style ?

Impression Style is the newest word processor member of the Impression family - a major update over earlier versions, with special attention paid towards improving the word processing abilities still further, and making it even easier to use than before. So, for example, it now includes automatic paragraph numbering, two sorts of on-line help amongst dozens of other improvements.

For those with technical writing needs it includes a mathematical equation editing utility and table building utility. For writers it includes the WordWorks dictionary and thesaurus package. Other features that help make Impression Style a better text processor include automatic

abbreviation expansion, drag and drop editing, an optional, configurable tool bar, along with firm favourites such as spell check as you type.

And for those who need complete control over the page layout and appearance, Style offers a comprehensive set of DTP features.



"There is no other product on the Acorn platform to touch this, whether at the £100 asking price point or at £500."

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Times Educational Supplement

£99 + VAT (£116.32 inc)

2Mbytes RAM and a hard disc recommended.

A full specification, including details of upgrade offers, is available on request.



Computer Concepts Ltd

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GridPro – Grid Processor Program

Peter Jennings

GridPro, the grid processor from 4Mation, was inspired by the pleas of a lace-maker who wanted a dot lattice for designing her patterns. This did not seem a likely subject for software which would sell in commercial quantities until it was realised that it could form the basis for a grid designer with far wider applications.

Everyone has used a grid at some time or another, whether compiling a table, drawing a graph, working with a spreadsheet or just doing a crossword. If you make your own grids, or need to buy specialised and perhaps expensive designs, GridPro could well interest you. It can also be used for designing repeating patterns, tessellations, tiled sprites and polar grids, which make it particularly useful to schools. The resulting files can be printed out, on any size paper, or exported into other applications and documents.

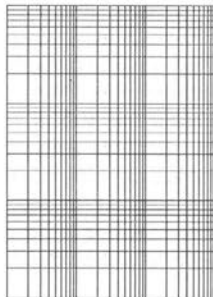
GridPro (version 1.00) costs £37.50 +VAT (or £41 inclusive from Archive). The price is double with a site licence or extra copies of the single disc can be supplied at £10 +VAT each. The program has a registration number and needs to be initialised by entering the user's name before it can be run or

copied to hard disc. Unfortunately for hard disc users, it has the irritating extra protection that makes it necessary to find and insert the original floppy disc every time the program is run, which is something I feel could sometimes be more of a deterrent to purchasers than to pirates.

There are more than 80 sample files giving you various types of grids and patterns, which are easily customised and which will probably fill most requirements. The 20-page manual explains how to edit them. This section of the manual, in tutorial style, comes immediately after the brief introduction but it is advisable at least to skim through the rest of the pages before studying it, to get to know the unfamiliar icons used in the toolbox and windows.

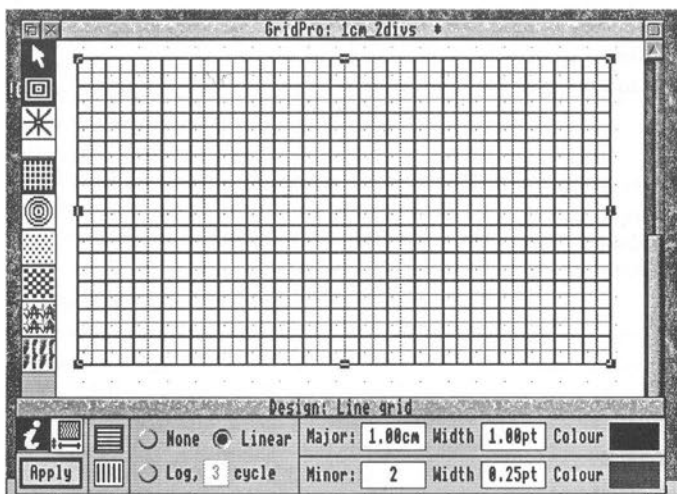
Line grid

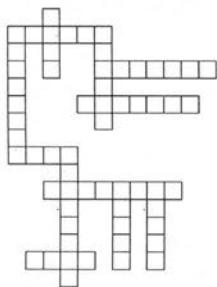
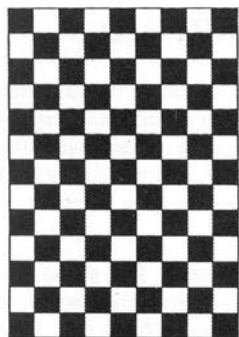
For the most common type of grid, the line grid, GridPro provides horizontal and vertical "major" lines and similar pairs of "minor" lines which can be used to make subdivisions. The lines can be set



to any spacings, thicknesses or colours and either vertical or horizontal lines can be turned off. Colours can be set to "none" and this will eliminate the minor lines when they are not needed. Logarithmic grids can be created by clicking on a button and entering a cycle value to specify how many times the log scale is to be repeated.

A grid can be dragged to size and this can be done without altering the spacing between the lines so as to give the required number of boxes of the chosen dimensions. It can





also be dragged to anywhere on screen or, more precisely positioned by changing the parameters shown in a window.

Chequer

A “chequer” grid is similar in appearance to a line grid except that alternate rectangles have a fill colour which can, however, be set to “none”. Apart from this, the main difference from a line grid is that the number and size of rectangles are adjusted rather than the lines which form them. The number and the size can each be set to be the same horizontally and vertically to keep the grid and/or the boxes square, making it simple to change the configuration to that of a chess board, for example.

Crosswords, one of the commonest uses of grids, cannot be made directly as there is no facility to colour individual squares. This could be done in a program such as Chameleon or, if a sprite is acceptable, you can use Paint to snapshot a squared grid and then to fill in the black areas.

Dot lattice and polar

Other types of grids on offer may be less familiar. A dot lattice is composed of rows of dots which can have their size, colour and spacing adjusted. The arrangement can be rectangular or skewed at any angle from 20 to 70 degrees.

Polar grids are the most complex. They can take the form of a complete circle or a sector of one, with interior rings and/or spokes and optionally with a “hollow” centre.

Modulo circles

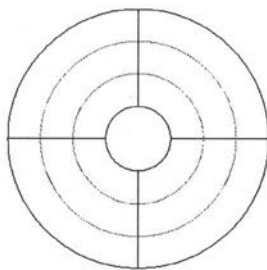
Thirty-five sets of six modulo circles are also sup-

plied, as both separate files and in a Vector-type library which can be loaded into a tessellation window. These have different numbers of points marked round the circumference and can be used for modulo arithmetic or just for creating patterns. One set, called Clockface, has twelve points with the appropriate numerals marked in. The manual has a page of suggestions for using modulo circles, tessellations and dot lattices. There is also a directory containing a set of calendar blanks, a diary page and a sample table ruling.

Designing

Designing your own grid is basically a matter of clicking on a toolbox icon to choose the required type and then changing the default settings in a pair of windows, Design and Size/Position, in the same way that the example files are edited. The options vary according to the type of grid and can look a little confusing at first. For example, with line grids there are four different sets of lines – major and minor lines both horizontal and vertical – which can all be adjusted separately. The manual shows how to change the parameters but it took me some time to

work out the best way to make my own designs.



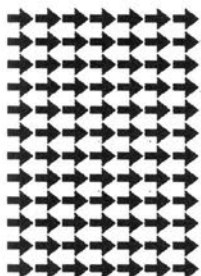
I wanted to get single lines of square boxes, both horizontal and vertical, to fit together for an interlocking word game. It was easy to do this by dragging the example

matrix of 1cm squares into a single line (using <select> so that the spaces between the lines, forming the square boxes, do not change size or shape) but I eventually worked out how to design it from the beginning from scratch.

This can be done by setting the major lines to 1cm (that is the space between them) both horizontally and vertically and ignoring settings for the minor lines except to change their colour to “none”. You then toggle from the Design window to the Size/Position window and set either the vertical or horizontal size to the number of boxes required in that dimension. The size for the other dimension must

be 1cm. For example, setting the vertical size to 10cm and the horizontal to 1cm will give you a vertical line of 10 square boxes. This all takes about a minute and is much easier to understand when doing it on the computer than just reading about it!

In practice, you can simply load the 1cm square example file and just make the changes needed in the Size/Position window in a few seconds but doing it all from the start at least once does make it clear how the program works.



Tiles and tessellations

Tiled sprites and tessellations are somewhat different and the manual could be a little more detailed on making them. You begin by dragging the sprite to be tiled or the drawfile to be tessellated into a window. You

then have to open a menu and confirm the choice of graphic by clicking on its name before it can be used. The instructions then fail to say how to make the graphic into a repeating pattern, but it is again done by increasing the size, this time both vertically and horizontally. This is logical enough once you have discovered how the program works but is not very apparent to newcomers.

Worth having

This is a very versatile program, aimed for use in education from primary schools to colleges and for anyone else who uses grids of almost any type. If you want to make your own grids, simply and quickly, you will find GridPro well worth having and frequent users may wonder how they managed without it.

GridPro costs £37.50 +VAT from 4Mation (£41 through Archive) for a single user or £75 +VAT (£41 through Archive) for a site licence. **A**



WE'RE BACK!

TableMate 2 is the latest version of the very successful table making application from Dalriada. TableMate has been bundled with Impression Style. TableMate 2 brings:

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Purpose:	This is a simple example table to demonstrate some of the features of TableMate 2	
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Phone / Fax: (0926) 53901. All prices include P&P. No VAT charged.

TableMate 2

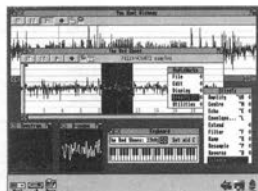


Eagle M2 — *soaring* to great heights



Eagle is the new do-it-all multimedia system for Acorn computers. It can handle a wide range of data types, combining the ability to capture sounds, still pictures and movies. The advanced hardware is accompanied by some of the best software available for manipulating data from all of these sources.

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Price: £329 + £6 carriage + VAT (£386.57) including the Eidos software.

Consists of one standard size expansion card, suitable for all machines that accept this size expansion card, including the new Risc PC. RISC OS 3.1 and a minimum of 2 MBytes required (ARM3 and 4 MBytes for movie recording and sound output).

Further details are available from Computer Concepts on request.

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The Internet, Fidonet and Schools

Doug Weller

Email isn't new to schools; schools in the US, Canada and Australia/New Zealand have been using the Internet and Fidonet for years for communications.

At the moment, Campus 2000 is the main network British schools use for electronic communications. The Internet isn't new to UK schools, but up until now, only a handful of schools have been using it, many through the Chatback Trust which has been funding about 40 schools with special needs departments. This is set to change soon. Within months, if not weeks, Campus 2000, the BBC and Edex (The Educational Exchange) will be vying with each other, and more traditional providers such as Demon, to provide Internet services for schools.

Why use the Internet?

We've already used the Internet to exchange diaries with 125 schools around the world. Next school year we will be working with schools in the US, Canada, Australia, Brazil, Israel, Latvia and Russia, with children in (at least) Years 2 to 6. We will be writing joint stories, exchanging data on acid rain and the weather, discussing different landscape features, doing joint reading projects, and other activities still to be planned. Through the Chatback Trust, our less able children will be engaged in projects specifically tailored to their needs.

All of this will be done using only Email. We also hope to be able to use some of the more sophisticated research facilities, for instance, to get up-to-the-minute earthquake information. Unfortunately, at the moment, the software required for some of the more exciting Internet explorations (e.g. Mosaic) isn't available for the Archimedes.

How can my school get onto the Net?

There are a variety of ways that schools can access the Internet. Probably the simplest is the way we started, via a Fidonet BBS which allows its users access to the Internet. An increasing number of BBSs are offering Internet Email and newsgroups. These can be accessed using any Archimedes comms software, but the best method is to become a

point (i.e. a mini bulletin board) using the free software which is already available for the Archimedes, !Binkley and !Fidomail.

More direct access to the Internet is available from providers such as those mentioned above, but of course these cost more. Schools with special needs departments could consider asking the Chatback Trust to sponsor them. This would mean Chatback paying a bursary for phone bills in return for the school's special needs pupils being involved in various projects using Email.

Once on the Internet, there are a variety of newsgroups and mailing lists for teachers. These will probably be the subject of a future article. Right now though, if you have access to Internet newsgroups, either through direct access to the Internet or a Fido BBS hooked up to the Internet, look for the newsgroup `uk.education.teachers`. (If your local bulletin board doesn't take it, ask the Sysop!). This particular newsgroup has been set up as a helpline for teachers wanting to use the Internet, and I will be regularly posting information about mailing lists, suggested projects, etc.

How about Fidonet?

Paul Welbank's StarNet BBS at Eaton (City of Norwich) School acts as a support centre for schools using FidoNet as a low cost medium for inter-school communication. Several schools run Fidonet points from StarNet. StarNet provides advice, help and often software to schools wanting to join Fidonet.

They have originated the UKSCH_* clutch of Fidonet conferences, including High-School Chat and 6th Form Chat (both of which are highly actively used by school-age kids), Junior and Teacher Chat; all of which are UK backboned.

They have also been researching and developing software for making the 'pupil interface' to email systems manageable. The current project has produced a system capable of connecting all users on a school Acorn Econet or Ethernet network. It runs up to sixteen simultaneous users and can interface them to local email and conferences, Fidonet and, soon, Internet.

They have recently achieved a 'first', I think, in establishing a direct fido link between two large secondary schools. Pete Bradbury's 100 station network in Stantonbury Campus school is linked with our school's 60 station net. StarNet BBS can be contacted at 0603-507216, 2:2501/405.

If you want more information specifically on using the Internet, my email address is dweller@ramtops.demon.co.uk, or via Fido netmail, 2:2501/405.16. Or you can phone me on 021-708-1254. **A**

Talking Rhymes

Paul Hooper + Class H, Martham First School!

According to the credits, this suite of programs was written by Brian and Maddy Kerslake whilst stuck in traffic on the way back from the 1993 NCS Open Day. If that's what it takes to produce a first class set of programs then please may we have more NCS Open Days on very busy holiday weekends out in the middle of rural Norfolk!

All the programs were tested on an A4000, an A5000 and a Risc PC and worked fine, but you do need at least 2Mb, so on the A4000 space was a little tight.

The review copy came in a neat little box and contained four discs with a rhyme on each. The manual is an A5 booklet which not only has full instructions but also gives hints on how to use the rhymes in the classroom. Also included is a set of photocopy masters which can be coloured in or cut up as jigsaws. Volume one contains Little Miss Muffet, Humpty Dumpty, Georgie Porgie and Little Jack Horner but an extra four rhymes are listed on the outside of the box and will be available later in the year.

Getting started

Each rhyme had to be registered before it could be run but was easily installed on a hard disc. Jotter font is provided and has to be installed in your font directory. The normal double click on the icon produces a blank screen for a few seconds and then a loading screen. The program is not multi-tasking and will take over the whole machine. The program checks if a printer driver is present and, if not, gives you the opportunity to load one. Then you are presented with a picture that has been split horizontally into four pieces and mixed up. Using a drop and drag technique you must reassemble the picture.

Now a nice touch here is that it doesn't matter which button you use on the mouse, they all work the same – so young children who sometimes have difficulty hitting the right button can use this program without difficulty.

Once the picture is correct, you then get a voice in a cartoon style, reciting the rhyme. Although this is not synthesised speech, it does sound slightly disjointed as it is made up of a series of one word sound samples. Then comes the best bit – the picture is then animated so that Humpty Dumpty does fall off the wall and the Kings men turn up to try and put him together again – complete with a pot of glue! The cartoon characters are delightful with lots of humour in the animations – Little Miss Muffet's tonsils have to be seen to be believed!

Certainly, the animations became the main talking point in the playground and because they are so detailed, each pupil had seen something different and wanted to come back and check out what they had missed the first couple of times round. At the same time as the animation, a music only version of the rhyme is played allowing the pupils to sing along with the animation.

Yet more

Even if this was all the program was capable of doing, it would still be a good buy. Yet there is so much more. Instead of using the picture, you can have the words of the rhyme instead, or the words superimposed on the picture. The picture can be split into six vertical stripes or a six by four box grid. All pictures can be printed out, even the jigsaw ones. The animations can be run backwards causing much hilarity. The sound can be adjusted and all the icons can be configured on or off. When the words are

switched on, the voice speaks the words. The number of different features available explains why the voice sounds a little disjointed – there was no room left on the 800Kb disc. In fact, it is surprising that they have got so much on to one disc.

Conclusions

This program certainly deserves a place in any Primary School, as it will certainly give encouragement to reading. The measure of any good program is that children want to talk about it and use it again and again. Using this criteria, the programs were definitely a hit at Martham School. The cost is a very reasonable at £44 for all four rhymes through

Archive, and there are site licences are available through Topologika.

Now where can we send Brian in rural Norfolk to get him to devise yet another brilliant program? I wonder if he's heard of Whissonsett.....? **A**

User Feedback

What do the users of Talking Rhymes think about it? Two of the pupils of Martham First School give their views:

I liked it because I like the music and pictures.
Russell.

I liked it because I liked trying to work out how to move the bits around. Kirsty.



One of the King's men, glue-pot in hand!

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Century Old Style bold

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Gill Sans condensed bold

Gill Sans condensed ultra bold

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Monotype *Janson* italic

Monotype **Janson** bold

Monotype *Janson* bold italic

Matura™

MATURA scriptural capitals

Mercurius Script™ bold

Neographik™

Monotype **News Gothic**™

Monotype *News Gothic* italic

Monotype **News Gothic** bold

Monotype **News Gothic** condensed

Monotype **News Gothic** condensed bold

Monotype **Onyx**™

Palace Script® semi bold

Pepita®

PERPETUA® titling light

PERPETUA titling bold

Plantin® light

Plantin light italic

Plantin

Plantin italic

Plantin semi bold

Plantin semi bold italic

Plantin bold

Plantin bold italic

Plantin condensed bold

Poliphilius®

Rockwell® light

Rockwell light italic

Rockwell

Rockwell italic

Rockwell bold

Rockwell bold italic

Rockwell extra bold

Rockwell condensed

Rockwell condensed bold

Swing™ bold

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Hints and Tips

• **Boot structure on the Risc PC** – How many of you have got to grips with the Boot application on the Risc PC? It's a little bit messy on first glance – and even on second and all subsequent glances! However, it is also very powerful and practical. The following is brief guide to its contents and what they are used for and goes a little beyond the discussion in chapter 11 of the User Guide.

As many of you have discovered, the !Boot application simply runs the configure utility, enabling you to select various hardware and desktop options. It has also done an awful lot of work by the time you get to the desktop, setting up system variables, configuring your preferences and booting and running several applications, modules and obey files. Those of you with stronger stomachs may have shift-double-clicked on it and will have been faced with a bewildering array of nested directories and files, many of which are named !Boot or Boot, !Configure or Configure, and all of these are sufficiently dotted with references to each other to ensure that all who enter are reduced to quivering technophobes.

Please note that if you are going to make changes to the insides of !Boot, you would be wise to take a copy of it first. If you do find that the contents of !Boot.Choices.Boot are irretrievably messy, you can run the application !ResetBoot in \$.Diversions.Tools which will restore !Boot to its factory settings. Also, I would recommend keeping a copy of the RISC OS applications contained in \$.Apps if you intend to make any changes to them – as you do not get a copy of them on floppy disc, as you did with previous versions of RISC OS.

Apart from the usual application baggage of !Run, !Boot, !Sprites and !Help, there are two directories that are of interest (Resources and Choices) and two that aren't (Library and Utils.)

Resources contains the applications that RISC OS needs, but which needn't concern the user most of the time, these being !System, !Scrap and !Fonts. The !Configure application that gets run automatically by !Boot is also here.

Choices contains nothing but a directory called Boot and it is here that the interesting stuff resides.

The obey file PreDesktop gets run first and sets up aliases and system variables. Its most interesting job is to control which applications appear when the Apps icon on the iconbar is clicked. In the following discussion, 'Apps' refers to the directory viewer opened by clicking on the 'Apps' icon on the icon bar, whilst '\$.Apps' refers to the directory called 'Apps' in the root of the hard disc. As you will see, they are not the same.

By default the contents of \$.Apps all appear in the Apps resource. The easiest way to have one of your own applications accessible through Apps icon is to copy it into \$.Apps. Note that any applications deleted or moved from \$.Apps will no longer appear in Apps after a reset, and cannot be retrieved. Apps only contains a 'facade' for the real applications which are stored elsewhere. If you have a whole suite of applications you would like to appear in Apps, and you don't want them messed up with the contents of \$.Apps, you can ask PreDesktop to add them from any other directory. Near the end of the file PreDesktop is the line

```
AddApp Boot:*.Apps.*
```

which will place any application in \$.Apps into the Apps. If you want to add to this a single application stored elsewhere, you can add a line something like

```
AddApp Boot:*.MyApps.Impression.!Style
```

or to add all the applications in a given directory add a line like

```
AddApp Boot:*.MyApps.UsefulApps.*
```

The directory PreDesk contains things which need to be run before the desktop starts. This is intended for use by applications which need software, modules or drivers in place prior to the desktop but you may find you are required to place things there manually when installing certain new hardware and software products.

The file Desktop is where the !Boot system filer_boots anything that may be needed by the

operating system, and some of the essentials for the user. Desktop also causes any applications or obey files contained in the directory Tasks to be run. Inside Tasks is where applications may place files they want to be run within the desktop but before the user gets started. It already contains !ROMPatch and a file called Configure. If you create a Desktop Boot file from the task manager icon, this is where it is saved (see page 139 in the User Guide). You can also store your own goodies here. For instance, if you are using an IDE 105Mb removable drive in your Risc PC, you may want to place the !SyQuest Application in the Tasks directory so that it is always present on the iconbar when you start.

There is a drawback with placing applications in Tasks that install themselves on the icon bar. If you choose to create a desktop boot file, you may find you get a duplicate copy of your favourite application next time you reset the computer. The best way is to try it and see. !Syquest doesn't suffer from this problem.

You may have tried putting your best backdrop on the pinboard and saving the desktop to have it appear every time you use your Risc PC, only to find that RISC OS has decided to put one of its bland wallpapers up in its place. This is because the ...Tasks.!Boot file containing the state of the desktop (and therefore your pretty picture) gets run before the file Configure (simply because the files are run alphabetically). Then the Configure file simply pastes up the textured background choices you make from the !Configure utility and thus overwrites your true preference for a backdrop. You can overcome this either by running !Configure (by double-clicking on the !Boot application), selecting 'none' for background texture in the 'screen' options and clicking on the 'set' icon. You could try renaming either !Boot or Configure, so that they swap positions, but this is not the way to do it because changing either the desktop boot, or running !Configure, will create the same problem again. David Webb, NCS.

• **Changing ChangeFSI** – It is possible to modify !ChangeFSI v0.95 to enable non-Risc PC owners to create high/true colour sprites.

!ChangeFSI v0.95 allows Risc PC owners to create 16bpp (32,000) or 32bpp (16,000,000) sprites, but

it will not work on non-Risc PC machines – an error message comes up if you try and create one! However, a little modification of the !ChangeFSI Basic file gets over this problem.

Open up the !ChangeFSI application and look for a blue Basic file called ChangeFSI. Load this file into !Edit and 21 lines down you will see a line:

```
SYS "OS_SWINumberFromString",,
                                "OS_SpriteOp" TO spop%
```

insert an 'X' at the start of the "OS_SpriteOp" word so that it reads:

```
SYS "OS_SWINumberFromString",,
                                "XOS_SpriteOp" TO spop%
```

and 531 lines down (you may wish to use !Edit's F5 key short cut here!) you will see:

```
SYS"Wimp_ReadPixTrans",&100,sar%,n$,,,,
                                ifactors%,pixtrans%
```

insert a 'X' at the start of the "Wimp_Read..." word so that it reads:

```
SYS"XWimp_ReadPixTrans",&100,sar%,n$,,,,
                                ifactors%,pixtrans%
```

Resave the file!

Now when you enter a 32,000 colour display mode (or set !ChangeFSI's output option) and drag a suitable JPEG/TIFF, etc image to !ChangeFSI, the error will not occur, but a seemingly 'blank' white window will appear. The image is really there – it just can't be seen! Save this 'blank' image and you will have created your very own high-colour sprite! Stuart Halliday, Quantum Software.

• **Replacement mice** – With the Acorn mouse costing £40* and both the Clares and Watford mice costing £30, the survival of our school mice has been of some concern to me. The oldest mice for the A310s have caused most problems as they have weak leads and a little stretching breaks the wires inside the cable. They also go out of adjustment causing the pointer to stall or go off in the wrong direction. The A3000 mice have far fewer problems but, after a lot of use, they too can have cable breaks and one has failed electronically. So far, the A3020 type have not failed – but perhaps they have not been in use long enough.

(*We still have a few cut-price Acorn mice at £20. Ed.)

Hints & Tips

Repairing mice myself was a time-consuming business and replacement leads were costly too; one from Archive is £11 or £13 depending on the mouse-type. I have used a company called CSL to repair all the A310 mice. They are reliable and quick and have a fixed charge of £15 plus VAT, which includes a new cable. This is strong and thick and definitely child-proof, if a bit clumsy. Meanwhile, I have kept my eyes open for a cheap replacement. There are numerous compatible Atari and Amiga mice, usually selling for about £10 at shows, but they only have two buttons. Similarly, there are PC mice at a slightly higher price, but the 3-button variety are for the serial port.

Thankfully, the latest Maplin catalogue has a cheap 3-button Amiga mouse. A little investigation worked out the connections and then a bit of delicate soldering to a 9-pin miniature DIN plug, also from Maplin, produced a fully working replacement. The mouse is neat and fits well in the hand. It has a coated steel ball and membrane switches rather than microswitches. These could be replaced, but the feel is good anyway. A possible bonus is that the sensitivity is about twice that of the Acorn mouse, i.e. it moves twice as far on screen for a given movement across the mat.

For anyone who needs a replacement, I can recommend this route if you are a competent solderer with a fine iron. The connections and parts are shown below. Although the wire colours in my mouse were in a convenient resistor-code order, you should confirm this before soldering.

Parts from Maplin Electronics:

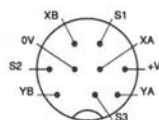
RT51F - Amiga Mouse - £10.95

JX19V - Min DIN Line Plug 9W - 98p

(Prices are inc VAT.)

Mouse plug connections

Pin	Function	Colour
9	menu	white
8	adjust	grey
7	select	black
6	yb	blue
5	ya	green
4	xa	yellow
3	xb	orange
2	+5v	red
1	0v	brown



Keyboard socket (or rear of plug)

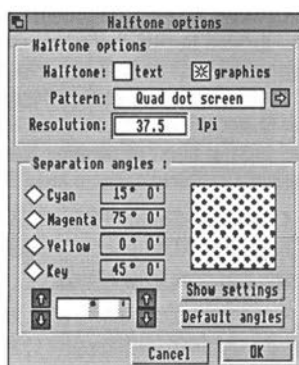
Steve Drain, Portland.

(If you have never soldered a mini-DIN plug before, be warned - it is a VERY fiddly job! Ed.)

CSL's address is: 15 Spencer Road, New Milton, Hants, BH25 6BZ.

- **Resetting the palette on the Risc PC** - One of our subscribers happily ran one of the alternative palette files, such as those given for Artworks and Impression, only to realise that on RISC OS 3.5 there is no palette icon with which to alter it, or, more importantly, to reset to default. We've not been able to find any easy way to reset the palette other than to take a default palette from a pre-RISC OS 3.5 computer and double-click on it on the Risc PC. This does the job so, for those of you who do not have the luxury of another machine, a default palette is included on the program disc. David Webb, NCS

- **RISC OS 3 Laser Direct driver problems** - If you look at last month's Archive carefully, you will see a small printing problem with the new RISC OS 3 LD drivers from CC. Take page 50 for example and look at line 8 which starts, "Star to average". As you will probably be able to see, there is a distortion of the text which looks like a missing line or lines of dots on the printout. Having once identified it, you



will probably be able to see it on many of the pages of the magazine at about the same position!!!!

CC know about the problem and say that they are looking into it. There is, however, a temporary solution. To stop it, you have to switch off the half-toning of text. To do this, shift-click on the !Printers icon on the iconbar and set the options as shown opposite to "Graphics only".

The only slight snag with this is that it reveals another (even worse) bug. If, with half-toning on graphics only, you print something sideways, it goes completely AWOL and prints the text at the wrong spacing and in totally the wrong place! *Ed.*

(Stop Press – CC say that they have a beta-release of version 2.65 which they are going to send me. It seems to have fixed the problems but, of course, you can never be sure until it is thoroughly tested. Ed.)

• **Selecting modes in Basic on the Risc PC** – We recently had an enquiry regarding the effects of the MODE command in Basic on the Risc PC. Unlike previous machines, the mode can be set using a mode definition string rather than just a number. The idea is that this gives access to the whole range of modes available to the Risc PC. If the specific machine on which the software is running does not support the mode requested, the closest mode which is available will be selected.

The mode description string takes the form "Xn Ym Ck" where n is the desired X resolution, m is the desired Y resolution, and k sets the number of colours – 2, 4, 16, 256, 32K, 16M are all valid colour specifiers. For example MODE "X800 Y600 C16" will choose a mode similar to mode 31 on earlier machines. Note also that the resolutions given in the string are the required resolutions in Pixels, not logical units as used by the Basic MOVE/DRAW/PLOT commands for example. More on this later.

The mode can be specified either by number or by string. Most of the old modes are supported, and with some calculation, the new modes are also accessible by number. The easiest way to find the number is to enter the mode using the mode string, and then "PRINT MODE" which will display the current mode number.

Unfortunately, for users who have worked their way up from earlier machines, the new system has some strange effects. The new method makes more sense than the old system which was based on the BBC Micro system of TTL rgb colours, but you do need to be aware of the changes. When a mode is chosen by number and the mode has 2, 4 or 16 colours, then the palette is redefined to be the same as that offered on the BBC, including, for 16 colour modes, the flashing colours. This is identical to the operation of earlier RISC OS machines.

If the mode string is used, however, there are some differences. Firstly, using the string has the same result as a "*wimpmode" command being issued rather than a "*mode". The effect is that (a) the desktop mode will have changed, and (b) the palette will be redefined to match the desktop palette for that number of colours, including clearing the screen to a mid-grey background, and selecting black text on a white background. Secondly, the computer gets to choose what it thinks is the best mode for the job. As noted above, MODE "X800 Y600 C16" gives you the same size and colours as mode 31, however the two are not identical. MODE 31 specifies a particular mode whereas the string specifies general requirements for the mode. In this case, where mode 31 has a refresh rate of 56Hz, the mode string selects a mode which has a refresh rate of 75Hz, considerably reducing the flicker. The important point here is that, by passing a string, the choice of mode is more independent, allowing the computer to choose the mode it can support that is closest to the mode requested.

If you need to use a limited number of colours, the best method to use is the mode string, followed by a redefinition of the palette if needed, using VDU 19,n,16,r,g,b. Individual colours can be chosen as normal using GCOL a,c. The more "official" method, especially for high colour modes is to use the mode string and the SWI ColourTrans_SetGCOL since that will choose the closest colour in the palette defined. (For best results, you may still wish to change the palette in low colour modes for particular tasks). An example is shown below in procedural form which you may find useful. The procedure will work on earlier machines as well.

```
REM PROCsetcolour
REM r%, g%, b% set the amounts of red green
REM and blue for the desired colour,
REM Colourtrans will be used to pick
REM the closest colour and set it.
REM effect% is a standard GCOL effect field
REM Use SWI number for speed :
REM ColourTrans_SetGCOL = &40743
:
DEF PROCsetcolour(r%,g%,b%,effect%)
LOCAL colour%
colour%=(b%<<24)+(g%<<16)+(r%<<8)
SYS &40743,colour%,,0,effect%
ENDPROC
```

Finally, let me deal with the OS and pixel units conversions mentioned earlier. Unlike PCs where locations of pixels tend to be addressed directly, Acorn has always had a level of indirection - the "logical resolution". This had two main advantages in the past, firstly that the logical resolution did not change with mode, so a line across the middle of the screen would still appear in the middle even if you changed the number of pixels on the screen. Secondly, the display worked in the same way as a mathematical graph, with the origin at the bottom left corner of the screen, y increasing upwards. If absolute pixels are used, the top left is the origin, and y decreases downwards.

The first of these two advantages no longer holds. Because of the dramatic increase in resolutions and the need to fit more onto the screen mean, the logical resolutions for different modes are no longer identical. Consider the table on page 525 of the Risc PC User Guide: Mode 12 is 640×256 pixels but has a logical resolution of 1280×1024. Incidentally, this was the standard logical resolution for all modes on the BBC and earlier Archimedes. Mode 27 at 640×480 only has a logical resolution of 1280×960 i.e. although mode 27 is "higher resolution", you actually get less of a page on the screen than you do in mode 12! (You will have to take my word for the logical resolutions - they have been taken out of the Risc PC manual, but appeared in earlier versions if you have access to those - page 221 of the joint User & Applications guide for RISC OS 3.)

This has been used to good effect on the Risc PC, allowing large area desktops such as the X1600

Y600 mode which has four times the area of the X800 Y600, but only double the number of pixels.

This means that you do not know what the logical resolution of a mode is when you choose it, so to make your software as mode independent as possible, you need to check the actual and logical resolutions using the SWI OS_ReadModeVariables and set up appropriate scaling factors. If you do not have the PRMs, you can assume that for rectangular pixel modes 2*X converts a pixel to the correct logical position, and 4*Y gives the appropriate scaling for the vertical. In square pixel modes, use 2*X and 2*Y for the scaling. If the actual Y resolution is less than half of the actual X resolution then it is probably safe to assume a rectangular pixel mode, otherwise assume square pixel.

On the monthly program disc is a program called "setcolour" which includes the above procedure. As a demonstration, the program goes through 2, 4, 16, 256, 32K and 16M colours and displays a slice from the colour cube. (You may find the program fails to display the higher depth modes if you do not have any VRAM). Simply double click on it, once it has finished the first colour square, press a key to move on to the next higher colour depth. You may need to reset your desktop mode after it has finished. SetColourN is similar but only uses 2, 4, 16 and 256 colours referenced by number to demonstrate the difference between desktop and default "BBC" palettes. This version will also work on pre-Risc PC machines. Matthew Hunter, NCS.

- **Sound Boots?** - For those of you seeking to boost the sound output of your computer, may I suggest you take a quick trip to your local branch of Boots the Chemist. In the music department, you should find a pair of Boots' own brand ZX200CD microspeakers for a mere £14.99. These come in rather a naff cardboard box, but do have a volume control on the front of each speaker plus a PBS button which enhances the bass sound. They require four LR6 batteries (about another £3) but as they have auto power switch off, these last a fair time. The supplied lead plugs directly into the headphone socket on an Acorn computer.

The difference is stunning and, certainly in a noisy classroom, they would be a great help. Even in the

home environment, they can make a lot of difference. Paul Hooper, Martham, Norfolk.

• **Thumbnail creation** – Quantum Software have provided Archive subscribers with a copy of Executor (the playback-only version of Keystroke). It has been supplied as seen, with no warranty, etc, for use by Archive magazine subscribers only, to demonstrate some of the abilities of Keystroke.

The application has the ability to produce, from a directory of JPEG or TIFF files, a multi-sprite file –

in effect, making a !Paint 'thumbnail' file.

These thumbnail sprite files are very useful for displaying your bit-map images quickly and, whilst it isn't as good as a professional thumbnail application, they cost money. Because Paint and this copy of Executor come free, this is an definite advantage! Stuart Halliday, Quantum Software.

N.B. Quantum are also offering Keystroke at a special price of £19 to Archive subscribers for a limited period. For details, see page 5. **A**

Second Impressions of the Risc PC

Martin Angove

My Risc PC finally arrived on the 1st June, so I've had some time to assess the thing for myself after all the hype in the Acorn press. It was about time I had a new computer – my trusty old A310 (4Mb, 130Mb IDE, Laser Direct, Vision Digitiser and Watford Handscanner) was beginning to show its age (six years old in July) with various symptoms for which no-one seems to be able to suggest a cure.

I ordered, from my local Acorn dealer Uniqueway, a 5Mb model with VRAM upgraded to 2Mb, and a 17" monitor. Unfortunately, they forgot to order the extra VRAM, so I'm running with 1Mb at the moment. When I got it home I started to unpack the thing on the kitchen table rather than clearing the space where it would eventually end up. I was a little surprised at first that the monitor had its own mains plug (rather than plugging into the monitor socket on the Risc PC), but after hunting for a two-way adaptor, I got it all switched on. I suppose I will eventually buy an IEC to IEC lead so that the two-way adaptor can return to its rightful home.

To avoid disturbing the rest of the family, I issued a *Speaker Off command so that the beeps (and later the Replay music) wouldn't annoy him. It didn't work. This was my first clue that, even though the machine superficially looks similar to the current RISC OS 3.1 machines, things are different deeper down. To save you from my burbling on, I've set my other observations out as a sort of list.

The case

Yes, it does look pretty, and is certainly easy to get

into, but the lid is a pain to put back on straight – you have to press hard on about three places at once. (*You can actually push each of the three points along the front of the lid clicking it into place one bit at a time. Ed.*) The flap over the drive bays, which makes the machine look so good when it is closed, is not quite big enough to close with a floppy disc partially inserted in the drive. I do this quite a lot with document discs – they are in the drive while I'm working, and then if I have to go off to do something else I press the eject button and leave the disc sticking out of the drive – just in case. Actually, the door is big enough to close with the disc in this state, but you'll need a small screwdriver to push the disc back a bit so that you can open it again later!

The keyboard

It is good that the keyboard is a more-or-less standard item. It shouldn't cost too much to replace if it ever goes wrong – it looks like a fairly standard PC keyboard with a PS/2 style plug. On the other hand, I don't like Caps Lock where Control should be – I very rarely use Caps Lock, but use Control all the time. Where it used to be it was quite easy to use one hand to (for example) type <ctrl-U> to delete the text in a writeable icon or <ctrl-I> to insert a frame in Impression II. Even a single-handed <ctrl-shift-I> was just about possible, in order to do the same in Publisher, but now both operations result in severe cramp unless I use two hands. I also preferred the larger left-hand Shift key – I keep hitting '\ now!

(This keyboard change is why I'm only half looking forward to changing to Risc PC. I use <ctrl-A>, <ctrl-S> and <ctrl-D> with alarming regularity when I'm

editing text. Does anyone have a module that will exchange the use of <ctrl> and <capslock>? Ed.)

The monitor

I ordered the AKF85 monitor with my Risc PC, and I'm glad that I did. Desktop Publishing is immeasurably easier in 256 colours at 1024x768 resolution than in the old 16-colour 1056x256 mode 16 I used on my A310. I've only had two problems with this monitor. Firstly, its serial number comes from Phillips, not Acorn, so doesn't fit neatly into the box provided on the registration slip, and secondly, juggling the screen controls to get as near a perfect picture as possible can be quite time-consuming since they all affect each other. It also displays TV modes (old numbers 0 to 15) in 'letterbox' format, but this is not usually a problem except with games (which often use mode 13).

Manufacturing problems

Acorn machines used to be manufactured by a company which is quite local to where I live, AB Electronics. Whether it was their fault or Acorn's for not anticipating demand for new machines I don't know, but there have always been problems with supply when a new machine was launched. Given that Acorn are no longer using AB Electronics, I tentatively expected fewer problems, until I had to wait three (or was it four?) weeks for my machine.

Whoever manufactures the machine, they seriously need to do something about their Quality Assurance. I had been using my machine for a couple of hours before I noticed that the floppy drive icon was missing. Closer investigation revealed that the Power-On-Self-Test routine failed to recognise the floppy, so assumed there wasn't one. There obviously was (I could see it!) so I took the lid off to have a closer look. It transpired that the power wasn't connected to the drive. It was then a relatively easy task to remove the backplane and plug the connector in. This raised a second point. There is only one 3½" style power connector, although there are two 5¼" style ones, one of which is attached to the IDE disc.

I telephoned Uniqueway to let them know, and they said that of the six (I think) machines they'd delivered up until then, three had had problems – their IDE hard drives weren't attached.

Design

Talking about the IDE drive, I thought the easiest way to transfer things from my A310 to the Risc PC would be to transplant the A310's IDE drive into the Risc PC. No such luck! The cable in the Risc PC only has one connector, and the one in the A310 (which does have two) is permanently attached to the IDE interface card. I suppose I could have put the Risc PC's drive into the A310, but I didn't feel like chancing it. How do I expand the Risc PC if I want to add another IDE drive? I suppose I'll have to buy another cable.

(Yes, you need an IDE cable with three connectors on it to replace the one you get which has two. There is a spare power cable coiled up under the floppy drive. You may find some mechanical problems fitting a second drive though. NCS can supply all the bits you need or a complete kit including hard drive. Ed.)

One final point about the hardware – if you look carefully you will see that there is space for another speaker to be fixed in the front of the case. Yet again, Acorn have supplied the machine with a tinny little excuse for a speaker, and in mono to boot! At least the sound output from the 3.5 mm socket is of better quality than used to be the case – maybe they've heard Ray Maidstone's Hifi upgrades, and incorporated a better filter. *(Yup! Ed.)*

Supplied software

I, too, regret that Paint, Draw and Edit are no longer supplied in ROM (although at least the three basic fonts still are). This obviously makes it easier to update them when required, but does use more memory. As a result, my 5Mb machine (4Mb main and 1Mb VRAM) has little advantage in terms of memory use over the A310 – any extra memory I may have soon gets eaten up by these programs which have in effect doubled or tripled in size.

Draw and Edit seem pretty much identical to the versions supplied with RISC OS 3.1, although Draw has obviously been updated to take advantage of the new 32 thousand and 16 million colour screen modes. What surprises me is that Paint hasn't been updated in a similar fashion.

Granted, Paint was never the world's most powerful bitmap editing package, but it did have its uses. I

can't see why it wasn't possible to enable it to edit sprites with large numbers of colours. One of my main uses for Paint is to crop images before transferring them to Impression or Draw to save space. Not being able to use, for example, a small part of a 24-bit sprite converted from one of the JPEGs on the hard disc is a bit limiting. On top of that, Paint won't even display 256 colour (16 greys) sprites from my Vision digitiser properly unless I'm using a 256 colour mode!

The other slight disappointment – sorry to the guys at Uniqueway who wrote it – is the Replay player. This application seems to sit uneasily on the gleaming new hardware. The most perplexing thing is that this package, which can play movies at 25 frames per second with stereo sound on an A5000, still needs to freeze all other tasks to do the same on a machine that is said to be twice as fast. At least when it's only reproducing sound it is able to multitask. Dig a little deeper, and you will find that it seems to be possible to get Replay movies to do all sorts of funny things – pretending to be film, moving about the screen, zooming or whatever. It is not as easy as all that – you have to fiddle with some of the supplied utilities which are written in Basic.

On the subject of the hard disc, I was also a little worried that Acorn had not seen fit to include the supplied utilities etc on floppy as well, or even to provide a utility to back-up the hard disc. Even cheap PC clone vendors are starting to realise that very occasionally accidents do happen, and it's very reassuring to know that your valuable applications are sitting on a floppy, just waiting to be copied back to the hard disc in an emergency. I spent quite some time working out how best to fit them onto floppies, and then copying them.

Compatibility

I was not pleased by the amount of software I had that didn't seem to work properly on the new hardware and OS. Among the more important (to me, at any rate), Drawbender from Ian Copestake crashes every time (an update is promised as soon as they can get hold of a Risc PC); ArcFS (version 1) works, but seems to affect some other applications – an upgrade is recommended for users of both version 1 and version 2; the PC Emulator needs an

upgrade, costing £9 plus VAT (my current version is 1.6); Laser Direct needs an upgrade which I hope will also fix the bug in the current version that prevents it printing (w-circumflex) and (y-circumflex) from the internal fonts; Translator by John Kortink gets confused and hangs the machine if you're using a 32 thousand or 16 million colour mode.

This last point brings out an important addition to RISC OS 3.5. If your machine hangs (an application gets stuck in a loop, mouse clicks won't work and so on) just press <alt-break>. This will, nine times out of ten, bring up a dialogue box enabling you to stop the process in question and continue. This answers one of the main criticisms of a co-operative multi-tasking system; that you have no control over a process independent of the process itself.

Having said all that, it is pleasing just how many things do work! Perversely, it seems as though the programs that are presented most professionally (see some of the list above) have problems, whereas programs you'd expect to fail, don't. In this last category, I include such gems as the Digital Symphony player and tunes (although Trackers and Teq Music as used on some games seem to have problems), various game demos from cover discs (Spheres of Chaos, Flashback etc.) and PD utilities such as William Tunstall-Pedoe's excellent Supergram (I recommend upgrading to the much-enhanced version 2), and Panorama (produces drawfile world maps). PD utilities often cut compatibility corners because some programmers are just plain lazy. The Vision digitiser is an excellent example of a cheap and cheerful product that needed no upgrading to work on the new hardware, although it still needs to be in mode 15.

On the other hand

Don't think I'm not pleased with my new machine! I'm glad that I waited for it. This time last year I was wondering if I should try to scrape the money together for an A5000, as my A310 was starting to do some funny things. Fortunately, I held off, saved up, and have been well rewarded. All I need now is yet more money so that I can buy a 24-bit A4 colour scanner, colour laser printer, CD-ROM, 21" monitor, Syquest removable – the list goes on! **A**

Comment Column

• **Acorn success story** – We have received news of another Acorn success story. Congratulations to Archive member Philip Foster and the production team of StreetWise, the parish community magazine of St Matthew's Church, Cambridge. StreetWise has won joint first prize in the National Parish Magazine Competition, awarded at a special ceremony during the General Synod at York in July.

Ruth Geldhill of the Daily Telegraph, who was one of the judges, commented on Radio Five Live that the quality of both the production and the journalism had impressed her. The Rev Philip Foster of St Matthew's Church and one of the editorial team of five said, "We used Acorn equipment from the second edition and have never looked back. We now produce the entire magazine in-house and present our Printers with positive film so that they can go direct to plate. What further encouraged us was the discovery that our co-winners ("Newslink" from St Faith's church in Crosby) were also Acorn users. A real double first for Acorn and Computer Concepts' Impression DTP software."

StreetWise is delivered to each of the 1700 households in the parish each quarter and it has nearly completed four years in circulation. You can get in touch with Philip Foster on 0223-63545 (fax 512304) for further details of the equipment and production process used for StreetWise. If you would like a sample copy of the magazine, please send Philip £1 in money or stamps as the magazines are a little postage-hungry!

• **"Don't sign for it!"** – (*Vera Cooke, NCS, writes...*) We have had a couple of problems lately with carriers (and have tried one or two different ones). If you receive a parcel from NCS, please examine it carefully BEFORE signing for it. If it looks as if it might possibly have been damaged in transit, put something like "Packaging appears damaged" and then sign near what you have written and not in the box where they ask you to sign. The point is that if you sign to say that the goods are accepted, the insurers refuse to pay out if you then try to say later on that the goods were damaged.

• **"Sign it!"** – (*Vera Cooke, NCS, writes...*) When you receive a Risc PC, please be sure to fill in and send the warranty card. If you don't do so within the specified time, you will not be entitled to the one year on-site warranty. Also, if a computer is going to go wrong then after it has been shaken about twice by carriers (Acorn→NCS→you) is the most obvious time for it to go wrong, so it's important to get that warranty card off a.s.a.p. to avoid delay in the event of something going wrong.

• **Impression Publisher** is here at last. Has it been worth the wait? Indubitably yes! There are so many extra features – some are cosmetic, others make life simpler and there are many, many others which are major enhancements to what was already a powerful piece of software.

I gather there is going to be a full review in a future issue of Archive but, in the meantime, here are a few initial comments (mostly cautionary, and aimed at those who are familiar with Impression II).

– Not surprisingly, with so many extras, the size of the basic program has virtually doubled. With Impression, it was Computer Concept's claim that useful documents could be produced on a machine with just 1Mb of memory. Now, inevitably, the recommendation is for a minimum of 2Mb and if you use it for producing books or other lengthy documents, 4Mb is essential (and 8Mb desirable).

– Once you have learnt the keyboard shortcuts, they speed up work more than a little. But a large number have been changed between Impression II and Publisher. Refer to the manual or my quick reference card. (Plug, plug! See Products Available on page 4.)

– With early versions of Impression, I managed to crash it quite often, but by version 2.19, it only occurred rarely. With Publisher, the sequence seems to have started over again, so make regular backups, preferably to files with different names. Barry Humpidge, Sheffield.

(I have a decidedly vested interest in knowing if this last comment is true! We haven't heard many bug reports yet. Ed.)

• **PC Dilemma** – (*Ed writes...*) If Archive claims to cover “anything to do with Acorn’s range of computers”, does this mean we should now be dealing with Windows, DOS, etc? We have, in the past had articles about using the PC Emulator and various comments about the relative merits of Macs, PCs and, in particular, Risc PCs.

What I am inclined to do is only to cover the areas of interface between the PC and the RISC OS world. If people want articles specifically about “using Windows” or such-like, wouldn’t it be more sensible to get them from the (ubiquitous) PC magazines? How much coverage do you think we should be giving to “things PC” in Archive? Perhaps people would write and let us know their views (on the questionnaire, perhaps).

Is there anyone who would like to have a go at fielding the questions, suggestions, etc about the use of the PC second processors on the Risc PC and do a couple of issues of a “Risc PC–PC Column” – or however many it takes? *Ed*.

• **Protext 6** – Users of Arnor’s Protext 5 word processor, one of the few major Archimedes programs which is not multi-tasking, are still waiting for the RISC OS compliant Acorn version of Protext 6 which was promised for “early 1994”. PC and Atari versions were issued last year but Arnor still do not have a release date for Acorn machines. They say they hope it will be available in September or October, so perhaps it will be running on RISC PCs at the next Acorn World show. Peter Jennings, St Albans.

• **Puzzles, please** – In Personal Computer World, there is a monthly prize competition (normally far too easy) and a maths/computer article by Mike Mudge (usually far too difficult for me). Any chance of something similar, preferably of a degree of difficulty half-way between these two? R W Newmark, Sunderland. *Any offers, anyone? Ed*.

• **Risc PC and the future** – As would be expected, there has been a lot said about the Risc PC in a very short space of time. Since I have had my machine for a week now, I thought I might as well get my oar in too. First impressions are very favourable, but although the ARM 610 is noticeably faster than the 30MHz ARM3 in my A540, it is

VIDC20 and the improved efficiency of the video system which is the more significant factor.

I am running in 1600×600 in 256 colours and 75Hz refresh rate. This is excellent for spreadsheets and gives a nice steady image with the large expanses of white in Impression Publisher. These areas are prone to show flicker at rates slower than 60Hz.

I think that the limit of 2Mb of video RAM is sensible since, although higher resolution and greater colour depth are theoretically possible with more VRAM, I suspect that correspondingly low refresh rates would make it impracticable. Still, VIDC enhancers have been known in the past and I dare say that someone out there needs (wants?) 1600×1200 in 32 bit colour and 70Hz.

If I am honest, as far as my business is concerned, I’m not sure I really *need* a Risc PC. My A540 can do most things I require and it is the larger monitor and bigger capacity drives which have helped the most rather than processing speed. I am a bit faster printing with the Risc PC but software upgrades from Computer Concepts, such as a RISC OS 3 Laser Direct which can print rotated text, certainly improved the A540 system.

I can’t help thinking that the IT industry is at a bit of a watershed though. The vast majority of business machines are sold to people who have very limited needs, and they will not just upgrade for the sake of it. How likely is it that Pentium processing power will really be needed by the hundreds of thousands of secretaries doing wordprocessing plus the odd bit of graphics in Windows? If that’s the case, the growth in the number of desktop computers could well tail off with people buying new to replace worn out rather than new to give vitally needed additional functionality. Acorn’s move into telecommunications might turn out to be a shrewd move. (*See page 13.*)

I must at this point mention the efficiency of Granada Microcare. I had only had my new machine a few hours when the monitor refused to come back from an auto-blank. Although the fault seemed to clear itself after a phone call to Microcare, they still came out and swapped it for a new one. This was in under six hours from the time the first call was made on the Friday morning.

Since the Risc PC has cost me over £2,000 of my own money, do I think I have got value for money? Despite what I said in the first few paragraphs, I think the answer is yes, since I did need a second machine for the business. Also, I get a lot of pleasure from being different from my colleagues in my computer habits and enjoy being able to tell them that they make do with boring Ford Cortinas while I have the equivalent of a Ferrari. I also enjoy the knots they get themselves into when the Windows Drivers don't work or a machine with 16Mb of RAM says there is no room to run a wordprocessor and crashes amidst a flurry of gobbledegook or the salesman tells them that a site licence for Microsoft Office is £10,000 +VAT. Hilarious!

Looking at the component count on the Risc PC circuit board, and the overall design, I would be surprised if the manufacturing costs are more than a fraction of the retail price – probably similar to those of the A4000. Hard disc prices have fallen enormously since the launch of the A5000 and the use of standardised components such as a PC keyboard coupled with bulk buying must have helped.

Whereas the PC clone manufacturers are squeezed on their margins and must sell enormous quantities, Acorn have greater freedom to design a system which probably has higher margins and can therefore survive on fewer sales. But before you all rush to complain that they should slash prices, think things through. If they reduce the profit margin by 50%, they will have to sell twice as many machines just to stand still. Such a strategy is very dangerous as it could bankrupt the company if it doesn't work. *(And from a dealer's point of view, we only get a very small margin, so would we survive on the reduced profit of the reduced prices? Ed.)*

Apple found that reducing prices did increase sales but not profitability. Personally, I am happy to pay a premium for superior design and I don't want too many PC converts because I will lose my exclusivity. It's not half as much fun owning a Ferrari if everyone has got one.

I actually wonder if it would be possible to manufacture a PC clone version of Risc PC which could be sold competitively in the PC market, i.e. under

£1,000 – heresy perhaps but commercial sense if it were possible. From a marketing perspective, Acorn seem to be doing the right thing. They phase out a machine which is relatively expensive to manufacture and replace it with a better machine which could be less expensive. However, they keep the price of this machine as high as reasonably sustainable while all the “propeller heads” such as myself want one to satisfy their technological lust. They even make supply a little difficult to start with so that there is a real feeling of demand but not so bad that the enthusiasts give up. They then sell as many machines as they can make for a while with the highest margins. Then they design and launch a cut-down lesser version (cf the A3000 after the A310/A400 series and the A3000/4000 after the A5000) so that the masses and, in particular, the volume education sales who couldn't afford a Risc PC, can be satisfied. At the same time, they reduce the price of the original machine to entice a few of the customers at the lower end to go up market and buy a more expensive and more profitable machine. They then launch a new flagship and the cycle is repeated.

The only flaw in this analysis is that Risc PC is so expandable, it is difficult to see how the new flagship could be significantly different yet still maintaining software compatibility. Perhaps a 64-bit machine or a multi-(RISC)processor machine?

(The next real goal in my mind is the technology to run and edit full-screen, full-motion digital video of better than VHS quality without needing to break the bank for storage space.)

The interesting question is whether or not the next down-market machine will be similar to Risc PC with a coprocessor slot and built-in processor upgrade strategy. The more probable alternative is to use an integrated chip design like ARM250, perhaps ARM750 or ARM850. An ARM750 would presumably out-perform the current Risc PC and so there must be some inherent limitation to a new low spec machine or it would severely hit sales of the higher spec machines. If a fictitious ARM 750 machine sold at a similar price to the current A30x0 series, and had a coprocessor slot, it would make a fairly cost-effective IBM clone in its own right at current prices.

My guess though is that the replacement for the A3000/A4000 series will have an integrated processor such as an ARM750 but it will be fixed to the circuit board and therefore not easily upgradable. I also think that there will probably be no coprocessor slot. This will be a shame, given the potential to get in at the home user with a low budget who needs PC compatibility or the school likewise, but I think that's what they will choose in order to maintain product differentiation.

What I would then do is produce a variant of this machine without a hard or floppy disc but with Ethernet on the main circuit board and boot software in ROM so that it could be used exclusively as a network station. A high performance machine to go on a network at around £699 including monitor would allow schools to start thinking about providing the pupil machine ratio which is necessary for IT to become an everyday tool in all subjects.

Anyway, all this is sheer speculation and perhaps totally up the creek but then half the fun of owning an Acorn machine is guessing the next development. In my view, it's far more interesting than being constrained by a system with more inertia in its operating system than planet Earth. Ian Lynch, Tamworth.

• **Scanner controls** – In the recent colour scanning articles (Archive 7.7 and 7.10), I bled on about the importance of scanners having a brightness control. Two snippets have since come in on this point. Firstly, users of OCR packages (e.g. Sleuth) are finding that, by adjusting the control to optimise the quality of the monochrome scan, they can improve the accuracy of the subsequent character recognition process. This may need some trial and error to give consistently good results.

Secondly, users of David Pilling's ImageMaster application, with certain scanners, may find that, when BW (monochrome) is selected for scanning – for OCR work for instance – the brightness control has no effect. If this proves to be the case with your scanner, the contrast control should be used to achieve the same result. Jim Nottingham, York.

• **SCSI card compatibility** – As the range of SCSI devices available for the Archimedes/Risc PC widens, it is becoming increasingly clear that, at

present, there is no 'universal' SCSI interface card. By this, I mean that, typically, Card A will drive Scanner B but not Hard Drive C, while Card D will drive Scanner B but not CD ROM drive E, and so on.

What I would like to do is to put together a database of which SCSI cards will drive which peripherals satisfactorily, with a view to making this available through Archive for general benefit. In this, could I invite the help of everyone who has a SCSI card driving one or more internal or external devices. I would be very grateful if you could find the time to drop me a line (no 'phone calls please), giving me the details of your installation and how well it works or otherwise. Please could you include the following data:

- Computer model number, e.g. A410/1.
- Make + model of SCSI card, e.g. Morley cached.
- Version number of the SCSI software, e.g. V1.10. (To find out which version you have, press <f12>, then type *Devices <Return> and read the number against "Device 7" under the column headed "Revision".) (*I tried this on my Oak card with no success but *HELP SCSI did the trick. Ed.*)
- Make, model number and other details of your SCSI devices (again, press <f12>, type *Devices <return> and read off the details against the relevant device number, eg "Syquest internal 105Mb removable drive, Revision F7P"). (*Oak users, run !SCSIForm and do a (S)can. Ed.*)
- Name and version of software drivers for the device(s), where applicable. (For example, to read the version of CDFS, press <f12> and type *Help CDFS <return>. The answer will look something like "Module is: CDFS 2.13 23 Nov 1992".)
- Whether the device works or does not work correctly with the SCSI card. If not, how does the problem show up?

Ease or difficulty in connecting up. For example, are the connectors standard ("Centronics").

Please do not hesitate to add any other info outside this list which you feel might be useful. Thanks in anticipation. Jim Nottingham, 16 Westfield Close, Pocklington, York YO4 2EY.

• “What ever happened to PIPP?” – So said Richard Rymarz in his review of Small Steps (Archive 7.10 p47). Well, I can tell you that PIPP (Primary Integrated Project Planner) is indeed alive and well in the form of ‘Harmony’ from On Target Solutions, 80 Headcorn Drive, Canterbury, CT2 7TX. Both Acorn and PC versions are available, allowing the whole of the National Curriculum to be searched for keywords as well as linked to classroom based activities. Dave Walsh, Herne Bay.

• Wot!? No Acorn machines?? – (Steve Turnbull of Acorn Computing writes in response to comments about Archive being the only ‘true’ Acorn magazine, i.e. the only one that is produced only on Acorn computers.) At the Acorn User Show in Harrogate, Mike Cook and I did a question and answer session and one of the questions was Why don’t you use Acorn machines to produce your magazine? What follows is a little bit more than what I said then.

Until the advent of the Risc PC, the answer was quite simple: The machine is not up to it. But, I hear you cry, what about Acorn User? Well, although they designed the pages on an Archimedes, it was mostly just mono – the pictures were added afterwards by a bureau.

At Europress Publications, we produce everything up to and including the final colour separated films in-house. The only thing we don’t do is print. And to do that, you need a machine with 24-bit colour display and software with the power of QuarkX-Press, Illustrator and PhotoShop.

For Acorn, the software finally exists and so do the machines... but it’s too late for us.

Europress produces thirteen magazine titles per month using an established network of over sixty Macs. Each magazine, apart from the editorial staff, has one dedicated art editor and shares advert setting art editors. When the production of one magazine is running late and needs help, the other art editors pitch in by loading the page templates across the network and laying out pages. This involves a great deal of data transfer and it requires that every art editor uses the same software.

If the Acorn art editor was using an Acorn machine to work, what would happen if he fell behind in

production? He’d be in deep trouble. No one could help and, in our environment, where three magazine are produced every week, that must not happen. In addition, to be cost effective, he must be able to help others – which would be tricky.

Acorn themselves are sensibly not trying to target established Mac publishing networks, and no company in its right mind is going to dump all its Macs just to buy Acorn machines – it’s not financially sane. Instead, Acorn are promoting their systems at the droves of small printers who don’t yet use a computer and think they should.

As it happens, our advert setter does have a 10Mb Risc PC because 90% of our adverts are supplied in Acorn format. In fact, he’s taken his A5000 home so he can learn to use the software properly.

And just to clear up another misconception: All the Acorn Editors produce their copy and pictures on Acorn machines – we don’t use Macs and why should we? We don’t do layouts, we have Art Editors for that.

When I queried Steve about this last paragraph, he explained further...

The Acorn and Mac systems aren’t integrated. The Acorn adverts are PostScripted on the Risc PC and transferred by disc to the Mac. Until now, it’s been by PC disc (yuck), usually compressed by Spark. We now use MacFS and we’re bringing in a couple of SyQuest drives which will make it *much* easier.

Editorial is written in Impression with styles (headlines, italics, listings and so on) saved out as text with styles then converted using ImpQuark to text with XPress codes. Sprites are sent as TIFF using purpose-written converter, no frills or options – it just turns sprites of any colour depth into compressed TIFFs, singly or in batch. The resultant files are then put on Mac disc and put through to the sub-editor and appropriate art editor. Mark Moxon (Acorn User) is also now doing layouts in Impression – not for printing – just as ideas for his Art Editor. Steve Turnbull, Editor, Acorn Computing.

All I can say is, I’ll never complain about difficulties in the production of Archive again!

I explained last month (7.10 p17) how Archive is produced but I didn’t give any idea of timescales. I

usually finish editing all the articles on a Friday (although it sometimes spills over into Monday morning). During the course of Monday, I paste up the articles and print out the camera-ready copy which goes to the printers by 6.00 a.m. Tuesday morning. The

following Monday afternoon, 6,000 finished Archive magazines are delivered to the office. On Tuesday morning, the stuffing team come to stuff and frank the envelopes and, by lunchtime, the magazines are on their way to you. **A**

Risc PC Column

Keith Hodge

First my apologies if some of the material in the column seems a little dated this month, this is because I have submitted it to Paul some weeks ahead of my normal date. By the time you read this, my wife and I should be lying in the sun on the Atlantic coast of France.

Monitors

My 17" Acorn monitor has arrived – I do not know how I managed to work on A3 engineering drawings in landscape format before it arrived. The level of detail and the clarity of the display have to be seen to be believed. It is also so much less strain on the eyes and, with the new machine, the speed of redraw is quite remarkable, a speed increase of over 600% with a 193 Kb drawfile in 1024x768.

Software compatibility

In view of the full statement from CC in the June issue, there is no need to detail CC's products. However, it is worth noting that there are delays with some of the upgrades and I have received two reports that Artworks V1.50 will not install, giving a "internal error 13.6760" from the installer.

I am told that one of the reasons that games and music software are falling over, is due to some early (all?) versions of the SoundTracker module being incompatible with the Risc PC.

Following on from this, the complaint from the programmers is that Acorn released their new machine and only then the technical documents that explain it. Non-mainstream programmers therefore spend months waiting to find out why their programs do not work.

So how about it, Acorn? Why not release the OS extension notes as a readme file as soon as the machines are out (or before)? This will allow all the programmers who produce the software ideas (some

of which have ended up in RISC OS 3.5), to stop the loud complaints coming from some subscribers, who say that over 59% of their software does not run!

On a positive note, Solent Computer Products have updated and improved the Soundlab software that accompanies the Oak Recorder 2 hardware. Upgrades are available by returning your master disc + £5 + a stamped addressed envelope.

Hardware news

If real improvements in performance are to be achieved we need a SCSI-2 interface now! I wonder who will be the first to market one? I am delaying my scanner purchase until these are released.

The Alpha / ex-Arxe SCSI card (from the Serial Port) does not work, but the good news is that it is hoped to produce replacement PALs for this. Oak SCSI cards are reported to work well. Can people please advise me how they are getting on with other devices (scanners, tape-streamers, etc) on SCSI cards, as their experiences may save other people much heartache.

Floppy drives

The situation here is really unsatisfactory, as there is no way to use a second drive on the machine, other than by filling up an expansion slot with an adaptor card (and as yet, none are available), as there is no drive select hardware on the pcb. This is madness! Even a 10-bob Amstrad will allow that. Acorn need to do something about this now. Many people (myself included) receive work on different size media and need to add a 5¼" second drive.

Readers' comments

From Herbert...

(1) If you move the "images" directory away from the top level of the hard disc then !SlideShow stops

working. What sort of programming is that? The images are still in the same place relative to `SlideShow$Path`.

(2) I got LOOKsystems `!FontDir` to run at boot time by placing the directory containing the font partition in `!Boot.Resources`. Since that directory contains the `!Fonts` directory, I called it `!LookFonts` and changed the name of the relevant sprite in `!Sprites22`. I then placed `!FontDir` in the previously mentioned `Tasks` directory and away it went!

(3) Paint *still* cannot locally fill using a transparency mask.

(4) The CLib time bug (Archive 7.6 p38) seems to have been fixed.

(5) The restart button which follows a Shutdown request does a proper cold boot. Under 3.1 it did a warm boot which caused problems for my boot sequence.

(6) I am glad that Acorn have produced the User Guide as one volume, rather than the 3.1 version which is two manuals in one volume with separate indexes. I always found that confusing.

(7) The new boot system is very interesting but also very complicated. I haven't got fully to the bottom of it yet, but I have observed that one can live without a desktop boot file. I have effectively achieved exactly the same boot configuration as I had under 3.1 without producing a single boot file. The answer is to observe that any file or application which needs to be run at boot time should be placed in `$.!Boot.Choices.Boot.Tasks`. Examples include `!Printers` and the alarm database file. Leave the `!Alarm` application where it is. Applications which need to be "Filer_Booted" can be placed in `!Boot.Resources` (e.g. `!CCShared`).

(8) The switched monitor outlet is a great improvement, especially with the front mounted on/off switch.

(9) Although, as mentioned previously there is now a `!Fonts` directory on disc, the main fonts are still stored in ROM.

(10) I have found the cause of the problem with `!ArcTrack` under RISC OS 3.5. The next release will incorporate a fix. Registered users will be contacted.

From Arthur Taylor...

Arthur comments that he has managed to modify the monitor script file for his AKF85 so as to allow 1600x1200 in 16 colours with 1Mb of VRAM, and that it works well, (can we have a copy please, Arthur, for the column's PD disc?). Also, he says that the Marconi tracker ball works fine.

Requests for help

From Herbert...

The release note says that the Risc PC will only work with a serial mouse. Presumably, this means that my new mouse is a serial one. Why? I would like to use my optical mouse which I adapted (by changing the connector) from an Atari, but I dare not plug it in. It cannot be to allow people to use PC mice, since there are plenty of bus mice available for the PC. Using a serial port for a mouse is a botch caused by the lack of a mouse port on most PCs.

I observe that it is possible to configure the mouse type and that one option is a Mouse Systems mouse. I have an optical mouse from that company on my PC at work and it is very nice (I fell in love with optical mice when we got our first SPARCstation at work and now insist on having one on every machine I use.) Unfortunately, it has a 9-way D-Type connector. Is the Risc PC's mouse port connector a standard? Is it possible to order a 3-button optical mouse from Mouse Systems which will plug straight in? Basically, I want to know everything about Risc PC mice. (Can anybody do an article on this?)

Lastly from myself – is there anyone at Acorn who would like to supply some feedback from the horse's mouth, so to speak, about anything in the column? I would like to see problems sorted out quickly.

Question of the month

How many people have realised that there is a fan in the machine? It was only upon reading comment on this in a letter from Steve Waters, that I realised there must be one fitted. Acorn *have* been listening! It is *very* quiet. The question is, where is the filter? And how often should it be changed?

Gripe of the month

It is impossible to copy computer hardware today given the very high level of silicon integration used,

so why don't Acorn provide a copy of the circuit diagram and PCB layout with each machine?

Tailpiece

One of the reasons that the number of classroom whiz-kid programmers is falling, is probably the lack of a Windows 3.1 style, Visual Basic for the machine, i.e. one where you do not have to use SYS calls to produce windows. How about it Acorn? And yes, I know it is easy in C but there are plenty of large, worthwhile programs out there, written in Basic. The more people there are writing programs for the machine, the more machines get sold.

Thanks to all the people who have contacted me by snail mail, and those who have sent mail by Packet Radio. As a part-time columnist, it would make my life much easier if people could send their letters on disc, in almost any format (except Impression) as it saves me a lot of time entering it in the column. In return, if a stamped addressed label is enclosed, I will return the disc with any required PD software (as available), which is Risc PC compatible.

As usual, I can be contacted by letter at the HES address on the back page, by telephone after 7p.m. or by Packet Radio from anywhere in the world, as GW4NEI@GB7OAR.#16.GBR.EU. **A**

Acorn and the National Curriculum

Ian Lynch

Anyone who works in education will realise that there is a major revision of the National Curriculum in progress under the direction of Ron Dearing, Chairman of the School's Curriculum and Assessment Authority (SCAA). In this article, I am going to raise some issues about the proposed revision to the Information Technology component but first a little background for the uninitiated.

Each subject in the National Curriculum has a programme of study which lays out what should be taught and a set of criteria, called attainment targets, against which the subject should be assessed. The attainment targets are divided into ten levels which supposedly cover ages 5 to 16 across the full ability range. The curriculum is further divided into four key stages. Key stages 1 and 2 are for primary schools and 3 and 4 for secondary.

You might think that this seems fairly straight forward and, in many ways it is, but the controversy begins when you try to interpret the precise meanings of the statements at each level. Take for example the two statements "Pupils use computer models of increasing complexity and are beginning to assess the validity of these models" and "Pupils can apply their knowledge to compare two or more software packages critically in terms of their suitability for specific uses." Which of these statements would you think is aimed at the middle ability GCSE candidate and which at the most able candi-

date at the end of year 11? To me, there would be certainly some doubt if I did not know in advance. In fact, the first statement is level 6 and the second is level 10 i.e. the highest level.

The aim of the Dearing Report is to simplify the curriculum because the original had too many criteria, and teachers were getting bogged down trying to assess every child against every statement. It is true that the number of criteria has been reduced, but might this create more problems than it solves? After all, I could reduce the previous sentence to the word "is" but that would not be very helpful.

Whilst all subjects suffer from variation due to interpretation, well-established subjects such as mathematics, science and English have a fairly long heritage from which teachers make judgements about how they interpret level statements. Previous examinations, which cover all children of all abilities, provide exemplars of how syllabuses should be interpreted, at least as far as the degree of difficulty is concerned and so judgements made by teachers are likely to be within a reasonably narrow spread. Information technology has no such heritage and, furthermore, it changes rapidly with teacher qualification that is far more variable (non-existent?) than in, say, mathematics or English. Yet few people complain about unqualified IT teaching and, in my experience, are impressed just to see a young person at a keyboard.

To illustrate the variation in standards, let me mention a couple of cases which I have come across while inspecting schools. The first was a business studies lesson where 16 year old students were wordprocessing with Pendown from Longman Logotron. Impression was available on the machines, which were relatively new, and I was given the distinct feeling that it was teacher-security rather than the appropriateness of the software which dictated the application used. Pupils towards the end of a course were padding out indents with spaces and were unaware of the spellcheck on the main menu.

One could argue about the merits of using Acorn machines and software for business studies at the end of key stage 4, but it strikes me that this is a complete red herring. In this situation, teaching good practice, in terms of the skills involved and having up-to-date facilities at the right level for age and development, is far more important. Sticking a 486 PC with WinWord in this environment would make no difference and would probably have made matters worse. While the debate in this area is focussed on machine politics, we are unlikely to see a change to real quality of application and it is a sad fact that an outsider coming into this situation might be inclined to believe that this mode of teaching and learning is a consequence of using "toys" instead of "real business machines". In my experience, situations such as this are not particularly rare.

At the other end of the scale, I saw a young pupil working in a library without supervision scanning and animating images using Iota's colour scanner and image animator. (I have never seen examples of this type of work done on a Nimbus or an IBM compatible but this is not to say that it never does.)

We have to ask why it is that variation in IT standards are tolerated to a degree which would be unacceptable in, say, English or mathematics. I think the main reason is technophobia and ignorance amongst most of the general adult population. Most adults have experience of English and maths because they learnt these themselves at school and things haven't changed that drastically. Specific skills and knowledge in IT are often viewed with disdain – "you only need to be able to use it". Contrast this with English, where study of literature and grammar

beyond simple communication is thought to be important or with mathematics, where all sorts of specific processes such as algebra and trigonometry, which most people never ever use, are viewed as essential.

It is because IT changes so rapidly that some of the underlying technicalities need to be understood if we want to produce children and adults educated for change rather than trained in a specific skill which will soon become redundant. Surely, we want more open attitudes to change rather than a reinforcement of the attitudes of most of the present generation of adults. A more open-minded approach amongst managers in industry and commerce would have seen the dangers of a Microsoft monopoly with most new users adopting the IBM compatible path for reasons of fear rather than because it was the most appropriate solution to their particular needs.

So, how is this related to the proposed National Curriculum revision? There are several points.

1. The revised attainment targets seriously under-emphasise the technology component of information technology. This is rather like ignoring numeracy in mathematics or grammar in English.
2. There is no recognition of the importance of the technology itself in determining the degree of difficulty involved in specific activities. We all know that it is easier to do some things on a Risc PC than it would be on a BBC B.
3. There is no direct linkage between levels in the proposed IT attainment targets and those in more established subjects such as English, mathematics and science which every pupil has to study and which will provide the contexts for much of the IT application.
4. The suggestion is that 45 hours per year will be used to teach IT skills and knowledge and 45 hours for practice in other subject areas. Imagine a proposal that English or mathematics should be taught in this way.

So what is the solution?

There is probably not a perfect one, but at least let's go for consistency of standards expected in comparison with other subjects. Consider, for example, the level 4 English proposal, "handwriting is fluent,

joined and legible". There is no mention of the equivalent IT skills of keyboarding or document layout conventions. There is the mathematics proposal, "They understand and use simple vocabulary associated with probability such as fair, certain and likely" but no mention of IT vocabulary such as file, directory, graphical user interface (GUI), filetype etc. At level 4, the IT order expresses a need for "precision in framing questions" which is, in my view, a considerably higher level skill than those mentioned in the other subjects but one which is probably more acceptable to adults than understanding that lots of colours results in big files and therefore more expensive machines.

Specific IT lessons should be used to teach the specialist technical bits such as filetypes, operating systems and the latest goings-on in IT developments where appropriate. This implies the need for some specialist IT teachers who really know their subject and who are willing to read the micropress regularly

and keep up to date. The generic tools such as document processing, spreadsheets, databases, data-logging and control, graphics and music should be taught and practised in appropriate subjects. Calculators and slide rules have previously been taught by maths teachers so why not spreadsheets? English teachers should be prepared to teach wordprocessing – after all everyone else is expected to teach English!

Is this scenario realistic? Perhaps not currently in all schools. There is usually insufficient access to machines and appropriate software and, quite frankly, even if this were not the case, the majority of teachers are not sufficiently confident with IT to deliver an improved IT curriculum. However, reducing standards and specifying attainment targets vaguely is not a good long term solution because, as technology advances, the gap between the minimalists and the innovators will become wider and wider. **A**

PipeLineZ

Gerald Fitton

During the years I have been writing for Archive, I have been asked on many occasions for a tutorial explaining how to design a structure for a large set of interdependent documents. Of course, this is a big subject and there is no way in which I can deal with all of its aspects within a single article. What I have decided to do this month is to tackle one type of application which is relatively popular and use it to explain one of the most common problems which arises when a set of interdependent documents is 'badly designed'.

Naturally, I shall not only explain how the problem arises but describe the recommended solution. I have decided to use PipeDream for my example application (you'll see why later) but, like so many of my articles for Archive, you will be able to apply the principles I describe much more widely, for example to Fireworkz, and maybe to other spreadsheets as well. Let me take this opportunity to recognise yet again the existence of readers of this column who don't have any of Colton Software's

products. I welcome your letters as well as those from users of PipeDream or Fireworkz.

Mailshot

Before I start on this major topic perhaps the editor of Archive might allow me a (*not very!*) subtly disguised 'free ad' for our PipeLine and ZLine User Groups.

Colton Software are sending out a mailshot to all registered users of PipeDream with a special offer price for an upgrade from PipeDream to Fireworkz. Included in the mailshot is an 'Orange Leaflet' of ours (Abacus Training) in which we refer to the User Groups we run for users of PipeDream and Fireworkz. Although I think the leaflet does make it clear that we are independent of Colton Software and that all we do is run the User Groups, many people who receive that mailshot ask us to supply the upgrade from PipeDream to Fireworkz. We can't do this. The upgrade is available only direct from Colton Software.

The 'Free Ad'

Let me try to clarify the situation. As well as writing

the PipeLineZ articles for Archive, my wife, Jill, and I run the two user groups called PipeLine and ZLine. For their annual subscription (a modest amount which I shall delicately avoid mentioning in this 'free ad') our members receive four PipeLine or ZLine discs each year and as much free technical help with the use of PipeDream or Fireworkz as they need.

Colton Software regard the fact that an "Independent User Group exists" as a plus point for their products and one manifestation of this is that they give us a 'free ad' by enclosing the Orange Leaflet with their mailshot.

This Orange Leaflet should not be interpreted in any way as proof of an 'interdependent link' between our two organisations. We are totally independent of Colton Software. For example, sometimes our public comment about their products (in Archive and on our quarterly discs) are not to their liking. Nevertheless, they do respect our right to make such unfavourable comments (provided they are accurate). They put their side of the story to us and we try to report the true situation as objectively as we can to our readership (in Archive) and to our User Group members. We like to think that feedback from our members and Archive readers (through us to Colton Software) does help with product development.

Introduction

Now to the major topic, interdependent documents. If you have the Archive monthly disc, it will save you some time in that you won't have to create the documents of the example. If you don't take the monthly disc, you should be able to create the files from the screenshots which I include in this article.

All the files on the Archive monthly disc (and in this article's screenshots) are in PipeDream format. There are three good reasons why I have not used Fireworkz. Firstly, PipeDream files can be loaded into Fireworkz whereas the reverse is not true. If you have Fireworkz then drag the PipeDream files over the Fireworkz icon (installed on the iconbar) and the 'PipeDream loader' built into Fireworkz will convert the files to Fireworkz format. Secondly, as far as I can determine from my correspondence, there are many more PipeDream readers of this column than

Fireworkz users! I'll let you know when (and if) this situation changes. The final reason is that, because of a few (known) bugs in Fireworkz, some of the formulae inherent in the 'method' I am recommending don't work in version 1.07 of Fireworkz (but will work in V 1.08 – or so I've been told). This last remark about Fireworkz bugs applies particularly to the use of `set_value()` with Names (which I recommend in the final part of this article).

Unwanted dependent documents

In some applications, you can generate what I am going to refer to as "a long chain of unwanted dependent documents". As the application grows, the chain grows unwieldy because all the files in the chain are loaded one after the other when, perhaps, you want to work on only the most recent document.

The `set_value()` function can be used to 'unlink' the chain without destroying the (occasionally wanted) dependency. Using Named variables further simplifies many applications which use dependent documents.

For my example, I've chosen a simple accounts application where each month's transactions are kept in a separate document. First I'll explain how the basic application works, then I'll go on to demonstrate how the chain of dependent documents becomes unwieldy and, then we'll see how `set_value()` can help by 'unlinking' the chain.

Finally, we shall see how the use of Names for variables further simplifies the creation of new documents which have to be added to the 'unlinked' chain.

Monthly transactions

If you have the Archive monthly disc, double-click on the file [Acc_9301] to load it. If you don't have the monthly disc then you should create the file from the screen shot opposite – and the description I have given below. You will see that it represents a set of transactions for January 1993. The slot [Acc_9301]D5 contains the formula `D4+B5-C5`. The value brought forward from the previous month is held in slot [Acc_9301]D4, credits are added to that amount and debits are subtracted from it (line by line) to find the current balance and, finally, in

slot [Acc_9301]D8, the amount to be carried forward to next month's accounts.

This formula has been replicated down the column from D5 to D8 by marking D5D8 and using the command <ctrl-BRD> (Block Replicate Down) so that, for example, the formula in [Acc_9301]D7 is D6+B7-C7.

Jan 1993

	Credits	Debits	Balance
Brought Forward			£5.00
First Credit	£1.00		£6.00
Second Credit	£2.00		£8.00
First Debit		£5.00	£3.00
Carried forward			£3.00

Feb 1993

	Credits	Debits	Balance
Brought Forward			£3.00
First Credit	£8.00		£3.00
Second Credit	£4.00		£7.00
First Debit		£5.00	£2.00
Carried forward			£2.00

In the form in which I've included it, the file [Acc_9301] contains only three transactions, two credits and one debit but you can extend it quite simply. Place the caret anywhere in the last row and tap <F7> to insert a new row, make your credit or debit entry and, finally, replicate the formula in the "Balance" column through to the line you have just created.

Usually you would save the file (with its extra row) at this point but, in this case, don't do that or my next exercise won't work properly! Save it without the extra row if you must or, better, use the original.

Brought forward

Delete the modified file [Acc_9301] from your screen (decline to save it by clicking on the 'No' box) and then double-click on the file [Acc_9302] (the transactions for February 1992) (or, if you don't have the monthly disc, create it from the

instructions below). You will find that [Acc_9302] and [Acc_9301] are both loaded so that your screen will look like the screenshot [Screen1] above. The reason why [Acc_9301] is loaded is because slot [Acc_9302]D4 contains the formula [Acc_9301]D8. Provided that you have not modified my version of [Acc_9301] (on the Archive monthly disc) then this formula will bring forward the balance from January 1993 into the February 1993 document.

There are at least two difficulties which arise when you use this strategy of entering the slot reference of the previous "Carried Forward" file, [Acc_9301]D8, into the "Brought Forward" slot, [Acc_9302]D4, of the current month's document.

The first difficulty arises if you don't have both [Acc_9301] and [Acc_9302] loaded and you want to add to or delete rows from the earlier document. If you have [Acc_9302] loaded and add a row to [Acc_9301] then you will find that the slot reference in [Acc_9302]D4 will change to match the extended [Acc_9301]. However, it is all too easy to forget that you need both files loaded. If you don't have them both loaded when you add a row to the earlier document then, when you do load the later document, it will look for the amount to bring forward in the slot where it used to be instead of where it now is. The consequence will be that you'll have the wrong answer!

Yes! Before you start writing to me, I do know that a method of avoiding the 'loss' (some would say 'corruption') of slot references in this fashion is to use Names in the earlier document for the slots used by the later document. Some of the examples I have received from you use this method of 'non-local' Names - I don't recommend it. I shall explain how I use Names (and give my explanation of why 'non-local' Names are not a good idea) later in this article!

The second difficulty is one about which I get much correspondence. To understand why I get so many letters on this topic, I'd like you to imagine the situation in December 1993. When you load [Acc_9312] (not provided on the Archive disc) then it will call up [Acc_9311], which in turn will call up [Acc_9310], and so on until either all the monthly sheets have been loaded into memory or (as has happened to those of my correspondents with large

monthly files going back over many years) you don't have any memory left to use!

The automatic loading all these earlier files is what I mean when I refer to a "chain of unwanted dependent documents". As a document becomes older, the likelihood of you wanting to change it is reduced. If you don't need to change it then it is 'unwanted' – at least as far as the screen display is concerned. One way of 'breaking the chain' is to 'snapshot' a "Brought Forward" value with <ctrl-BSS> (Block SnapShot). This method of 'unlinking' the earlier dependent documents from later ones seems to be the favourite solution adopted by the majority of my correspondents. Of course, it requires a personal judgement about the likelihood of wanting to change an earlier 'unlinked' document against the desirability of keeping it (and all earlier ones in the chain) 'alive'.

I'd like to suggest to you what I believe to be a much better alternative.

Carried forward

You might regard the use of the formula [Acc_9301]D8 in slot [Acc_9302]D4 as a function which creates a 'backwards chain' of dependency.

Let me try to convince you that chaining backwards is not consistent with the nature of the application we're considering. The application is one in which amendments to an earlier document need to be 'chained' in the forward direction whereas additions to the most recent document have no effect on earlier documents. Chaining backwards, loading earlier documents into memory, is a waste of time and effort! What we need is a set of documents which 'chain forwards'. To put it another way, we want to 'push' the "Carry Forward" balance from the earlier document into the "Brought Forward" slot of the later document rather than drag the value from the earlier document into the "Brought Forward" slot of the later document. If we can find a way of doing this, we don't need to have the earlier documents in memory unless they need amendment. If they do need amendment then we want that amendment to 'ripple forwards' through the 'chain'.

This is where the function `set_value()` comes in useful. It can be used to 'push' the "Carried Forward" balance into the "Brought Forward" slot

PipeDream: RAM::RamDisc0\$.Acc_9401

	A	B	C	D
1	Jan 1993			
2				
3		Credits	Debits	Balance
4	Brought Forward			£5.00
5	First Credit	£1.00		£6.00
6	Second Credit	£2.00		£8.00
7	First Debit		£5.00	£3.00
8	Carried forward			£3.00
9				
10				
11				
12	Carried forward			£3.00

PipeDream: RAM::RamDisc0\$.Acc_9402 *

set_value([Acc_9403]D4,D8)

	A	B	C	D
1	Feb 1994			
2				
3		Credits	Debits	Balance
4	Brought Forward			£3.00
5	First Credit	£0.00		£3.00
6	Second Credit	£4.00		£7.00
7	First Debit		£5.00	£2.00
8	Carried forward			£2.00
9				
10				
11				
12	Carried forward			£2.00

PipeDream: RAM::RamDisc0\$.Acc_9403 *

2

	A	B	C	D
1	Mar 1994			
2				
3		Credits	Debits	Balance
4	Brought Forward			£2.00
5	First Credit	£0.00		£2.00
6	Second Credit	£0.00		£2.00
7	First Debit		£0.00	£2.00
8	Carried forward			£2.00
9				
10				
11				
12				

of the next document in exactly the way we want. This is the strategy I have adopted in dealing with the [Acc_94##] series (on the monthly Archive disc and shown in the screenshot, [Screen2], above.

If you load the file [Acc_9403] from the Archive monthly disc and look at the "Brought Forward" balance in slot [Acc_9403]D4 you will find that it does not contain a formula but a value. The document [Acc_9403] contains no reference to earlier documents so it does not 'pull' on the next link in the "chain of unwanted dependent documents" uselessly dragging them into memory in the way I've described in the previous section.

So how do we know that the "Brought Forward" balance is correct? How did it get there? One way

would be to use <ctrl-BSS> (Block SnapShot) and another would be to copy the "Carry Forward" (from the previous month's transactions) manually into the "Brought Forward" slot. Either of these methods are unsatisfactory if there is a chance that you might want to make an amendment to an earlier document. Amendments to earlier documents won't ripple through a 'snapshot' and it's too easy to make a mistake!

If you have the Archive monthly disc then load [Acc_9402]. If not then look at the screenshot [Screen2] and look at slot [Acc_9402]D12. You will find the formula (in the formula line) `set_value([Acc_9403]D4,D8)`. It is this `set_value()` function which 'pushes' the "Carried Forward" value from [Acc_9302]D8 into the "Brought Forward" slot of the March 1994 document. If you make an amendment to the earlier document you will find the amendment is 'chained' through to the later document. Try adding rows to the February 1994 document and you will see that the `set_value()` formula in what was [Acc_9402]D12 adjusts to the enlarged sheet.

Now delete the earlier [Acc_9402] document from the screen. You can continue to work on the March 1994 document and ultimately save it with all the additions you have just made.

To see how the 'chain' works, delete both the February 1994 and March 1994 documents from the screen and then double click on [Acc_9401] (the January 1994 file on the Archive monthly disc). That file and all subsequent files (February and March 1994) will be loaded. Make an amendment to the January 1994 file, save it and then delete it from the screen.

Using the 1994 chain of documents

For most of your work, you will not need the earlier documents loaded; probably you will need only the most recent document. You will make your changes to it and then save it.

Now and again, you will need to change an earlier document either to amend a value which has been entered incorrectly or to add an item which has been forgotten. If you load that earlier document then all subsequent documents in the chain will be loaded because the `set_value()` function from slot D12 will

drive the "Carried Forward" value into the next sheet. When you make your amendments to an early document, the consequences of those changes will 'ripple through' all later documents.

When you have finished with the early document, you can save it and then delete it from the screen. In fact, you can work through all the chained documents in chronological order saving the new versions and then deleting it from the screen.

If you run out of memory, you can 'unlink' the chain by tricking the package into believing that a particular file can't be found. For example, if you change the name of the file [Acc_9404] to, say, [Acc_9404a] (use the RISC OS feature Rename) and then double-click on [Acc_9401] you will find that the chain is broken when [Acc_9404] can't be found. You can make your amendments to the earliest file and then go through the process of saving the chain of files and deleting them from the screen.

Restore the renamed file to its original name and then load the file whose position in the chain is just prior to that one. The new values will ripple through the rest of the files in the chain.

Using names

The process of creating a new document (in PipeDream at least) is made easier if you use Names. But first, a word of warning for Fireworkz users. Several of my correspondents who have Fireworkz have tried using the technique which I describe below with near disastrous consequences. Fireworkz V 1.07 sometimes (but not always) gives the wrong answer but it never gives an error message. This is potentially dangerous, particularly for an accounts application. You have been warned! I have been told that in V 1.08 this known bug will be rectified. Version 1.08 will be released at the same time as the new database, Recordz (scheduled for September 1994). Either use PipeDream or wait for version 1.08.

I have used PipeDream Names in the [Acc_95##] series shown in the screenshot [Screen3] overleaf. If you have the Archive monthly disc then double-click on [Acc_9501] and you will find that the 1995 series will load and can be used in exactly the same way as you have seen when you used the [Acc_94##] series.

PipeDream: RAM::RamDisc0.\$Acc_9501

set_value([Acc_9502]bf,cf)

	A	B	C	D
1	Jan 1995			
2				
3		Credits	Debits	Balance
4	Brought Forward			£5.00
5	First Credit	£1.00		£6.00
6	Second Credit	£2.00		£8.00
7	First Debit		£5.00	£3.00
8	Carried forward			£3.00
9				
10				
11				
12	Carried forward			£3.00

PipeDream: RAM::RamDisc0.\$Acc_9502 *

set_value([Acc_9503]bf,cf)

	A	B	C	D
1	Feb 1995			
2				
3		Credits	Debits	Balance
4	Brought Forward			£3.00
5	First Credit	£0.00		£3.00
6	Second Credit	£4.00		£7.00
7	First Debit		£5.00	£2.00
8	Carried forward			£2.00
9				
10				
11				
12	Carried forward			£2.00

PipeDream: RAM::RamDisc0.\$Acc_9503 *

2

	A	B	C	D
1	Mar 1995			
2				
3		Credits	Debits	Balance
4	Brought Forward			£2.00
5	First Credit	£0.00		£2.00
6	Second Credit	£0.00		£2.00
7	First Debit		£0.00	£2.00
8	Carried forward			£2.00
9				
10				
11				
12				

Have a look at the contents of slot [Acc_9502]D12 (as shown in the screenshot). You will see that the formula `set_value([Acc_9503]D4,D8)` (using slots) has been replaced by `set_value([Acc_9503]bf,cf)`. Two Names, bf and cf (Brought Forward & Carried Forward) are used in the formula instead. The Name cf is 'local' to the [Acc_9502] sheet whereas the Name [Acc_9503]bf is what I am calling 'non-local'.

Now let's have a look at the Names which have been defined in [Acc_9502], what I am calling 'local' Names. These are shown in the screenshot [Screen4]. If you have the disc then place the pointer on the italic *f* which is just to the left of the cross

Functions	
Slot 'D12'	↕
Database	↕
Date	↕
Financial	↕
Lookup	↕
String	↕
Complex	↕
Maths	↕
Matrix	↕
Stats	↕
Trig	↕
Misc	↕
Control	↕
Custom	↕
Names	↕
Define name	↕
Edit name	↕
Edit name	
Name: bf	Undefined OK
Refers to: D4	

and tick boxes (in the same line as the formula line) and click once. At the bottom of the pop-up menu you will find the option "Edit name". Run the pointer through "Edit name" and you will see that within [Acc_9502] only two names have been defined, bf and cf which are both 'local'. By looking at the definitions (as if you were going to edit them) you will see that the Name bf refers to D4 and the Name cf refers to D8 – both of these slots are within the current sheet. There are no definitions which refer to slots in other sheets. At the risk of boring you, I shall repeat that I believe it is bad practice to define 'non-local' Names.

Now let's see how many Names we have in the whole chain of three documents. These are shown in the screenshot below. Once again, click on the italic *f* but this time run the pointer through "Names". You will find that six Names have been defined, two we know about (bf and cf) but the other four are Names which have been defined (locally) in the other two documents.

Names	
Misc	↕
Control	↕
Custom	↕
Names	↕
Define name	↕
Edit name	↕
[Acc_9501]cf	
[Acc_9501]bf	
bf	
cf	
[Acc_9503]bf	
[Acc_9503]cf	



On the Archive disc, I have included a blank file called [Acc_95xx] (also shown in the screenshot below) which can be used as a template for the whole [Acc_95xx] series. In it, the local Names bf and cf have been defined. Defining the two Names bf and cf in the template document makes it easier to create the next document. If you have the disc, double-click on the file [Acc_95xx] to load it, change the formula in the slot [Acc_95xx]D12 from its present value to `set_value([Acc_9505]bf,cf)` and then save the file as [Acc_9504].

Next you will need to 'push' the "Carried Forward" value from the previous document, [Acc_9503] into your new [Acc_9504] file. To do this you double click on [Acc_9503] to load it – then delete it from the screen! You will find that the "Brought Forward" value in [Acc_9504] has taken the correct value 'pushed' into it from the file [Acc_9503] which you loaded and then removed from the screen and memory.

To summarise

When you have a long 'chain' of dependent docu-

ments, you should consider whether you want to 'drag' or 'push' values from one member of the 'chain' to another. I suggest that for an application such as this one you need to 'push' rather than 'drag' slot values from one sheet to the next in the 'chain'. When you have decided that the correct strategy is to 'push', you need to use the `set_value()` function in the (often unwanted) 'dependent' document to 'push' the value (or values) you want to carry forward to the next document.

Names can be used for single slots or for ranges of slots. Generally, it is better practice to define Names in such a way that the definition is 'local'. That is to say the definition does not refer to (and thus call into memory and onto the screen) another document. If you define a Name in one document you can always use it in another document – we have done this in the 1995 'chain' of documents – but if you define a Name in one document which refers to a slot in a different document (what I call a 'non-local' definition) then you have a 'link' that you may not want.

Finally

If you have an application which you think may be simplified by the use of `set_value()` or Names but can't quite work out how to do it, please ask me. I will be able to work on your problem and send you the solution much more easily if you provide a disc-based example of what you are doing together with some note (in a [ReadMe] file) indicating exactly what you are trying to achieve.

Thanks for all your letters – we've been on holiday recently so please accept my apologies for the delay in replying to some of them. **A**

Elementary PipeDream

Mike Tomkinson

I like PipeDream – I always have. It may not be as fashionable as once it was and it now has many rivals as an integrated package – notably Advance. I graduated to PipeDream 4 via its predecessors even using the original View Professional on the Master. There have only been very rare occasions when I

have been unable to get PipeDream to perform as I wanted it to do. Recent price reductions have meant that many users are coming to PipeDream 4 afresh.

Its unique user interface is perhaps not the easiest to understand. That is not to be too critical of it. The new user cannot be overly critical of a package which has simply been overtaken in style by newer

packages, particularly as many newer packages are not as functional. Thus, while the spreadsheet part of Advance looks more modern, it is not as powerful as the spreadsheet aspects of PipeDream. There is also a distinct trade-off in useability and the user's ability to get the most out of more powerful software.

The manual and tutorial supplied with PipeDream 4 also show its age. Like most manuals, what you want and need to know is in there but the function you actually need is never explained in quite enough detail – especially for the beginner. Try using Lookups or Macros with the manual as your only reference.

For this and other good reasons, PipeDream has attracted a dedicated band of devotees, many of whom have subscribed to PipeLine – the PipeDream disc-based user group led by Gerald Fitton as part of Abacus Training. Here, for a small fee, PipeDream users have been able to turn for help and advice over the years.

This review is concerned with a group of three new discs published by PipeLine and called 'Elementary PipeDream'. The three discs cost £17 inc VAT. The files on the discs not only cover the various functions of PipeDream (e.g. PipeDream as a word processor) but also its desktop operation like saving files, opening files and so on.

It does this via a tutorial approach based on a number of drawfiles which are annotated screen shots of actual operations. These are incorporated into a series of lessons on PipeDream which appears on screen as a PipeDream file. The user scrolls through the document, learning as they go. This approach, while not new, at least attempts to overcome the problems associated with cryptic messages like "to save drag the icon to a directory filer" which can completely baffle a newcomer. A picture is certainly worth a thousand words.

The files on two of the three discs are compressed and need expanding via Sparkplug onto new floppies before use. This is a distinct weakness and I personally would not have liked to use the package without the benefit of a hard disc. Disc swapping is not my idea of a productive use of time and I estimate that you would need approximately eighteen

800Kb discs to decompress the whole package. The third disc contains files which form exercises and the answers to the exercises.

The files are a disc-based substitute for a book written by Ernie Cobbold. However, this book is not published in the normal sense of being able to order a copy from your local W.H.Smiths but is available as a series of desktop published notes.

The subject matter is certainly comprehensive for a package which styles itself as elementary – wonder what the author would consider 'advanced'? The topics are covered in the order wordprocessing, spreadsheet and database. Charts (or graphs) are covered in the spreadsheet section. Certainly, PipeDream functions best as a spreadsheet followed by word processor and, lagging a long way behind, as a database.

However, it is the integrated nature of PipeDream that is its strength and it is here that the Elementary PipeDream package is perhaps weakest by concentrating on the separate aspects of the program.

In use, Elementary PipeDream needs committing to paper via a good printer. The beginner would end up with too many open windows on the desktop to be able to use the tutorial on-line. The distribution of what eventually needs decompression and printing, preferably via a hard disc, can really only be justified on the grounds of cost and I do not know what Ernie Cobbold would charge for a full set of his work DTPed.

It would certainly be worth the asking price if it were in the region of the cost of these three discs, given the number of discs subsequently required and the fact that a good printer would then be required to make the files easily useable.

Conclusion

If you are new to PipeDream and/or new to RISC OS, or a teacher introducing pupils (or other staff) to PipeDream, I can thoroughly recommend this package. It will save you hours after you have decompressed it all and produced a set of printouts. However, this is not a job for the faint-hearted and really requires a hard disc and a quality printer.

Elementary PipeDream costs £17 inc VAT from Abacus Training. **A**

Quo Vadis – Using Multimedia

David Cartwright

(Continuing the theme we started some months ago, we have another article in the "I use my computer for..." series. Many thanks to David for an interesting and honest article. Ed.)

Since I first started taking an interest in computers, it was always the potential of computer graphics to show the unimaginable which fascinated me. Even back in the early 80's, the simple ability to manipulate shapes on screen using the BBC Micro revealed the potential of the powerful tools we have today. Until recently, the programs and ideas I have developed on my humble A3000 were merely for my own entertainment. So I was full of enthusiasm when I was asked by a friend to assist in producing an "alternative" church service aimed at today's younger people, using a technological culture with which they could identify.

The vision

We gave the Palm Sunday service the name "Quo Vadis". (Latin: Where are you going?) The aims of the service were clear and challenging and were being prayed about some nine months before the event. We proposed to use enlightening computer visuals and videos to show our audience the relevance of Christ's teachings today and illustrate the miracle of God's creation by using technology. To achieve this aim required consideration of the content of the service and the use, motives and impact of the technology. For my part (not being an active Christian at the time) I was to provide all the visuals needed for the service.

Collecting images

Many months in advance, we started collecting the photos and imagery that we would use. This involved taking an original photo of, say, a landscape or sunset and videoing it using a standard compact video camera. This signal was then fed through a genlock card on an Amiga so that we could superimpose text over the image. The final image on the screen was then photographed using a 35mm SLR camera onto slide film to give us a set of slides to show on the night. Videos were collected and edited

into a film that we wanted to show using two HQ Nicam videos that both had active heads – the type that stay dead-still when paused so that we could make perfect cuts from scene to scene with no ripple or distortion.

Enter the Archimedes

The trusty Archimedes was connected to the video camera via a Pineapple 16-bit real-time digitiser. We used this to digitise some of the pictures we needed onto the Archimedes, cleaning them up with Translator and storing them on my tiny 20Mb IDE hard drive to use as computer slide shows. Another piece of vital hardware was the Pineapple RGB to PAL encoder to generate the video signals we needed from the Archimedes. On the night, the images looked like perfect broadcast quality pictures even at the low mode 13 resolution of 320x256 pixels. This is because the video projector has the effect of diffusing the image slightly taking the roughness out of the image without loss of focus or clarity.

Controlling the displays

Having filled up most of the hard disc with pictures, we had to turn our attention to software and how we would control things on the night. After a long period of experimentation, we developed a collection of small demo programs that performed various nice effects on the pictures in real time. These included fade out to black, fade in, white out, colour cycle, zoom in/out and video feedback. We also put together some Basic programs which loaded approximately eight mode 15 pictures into my 2Mb of memory and replayed them at various rates from one every minute up to about four per second. Finally, we used some simple but colourful wave and kaleidoscope routines which produced nice patterns by the use of cycling the colour palette.

Equipped with a graphics tablet and pen stylus, we aimed to select these effects just by clicking on them. This would be preferable to using the keyboard as it would be difficult to see the keys in low light and mistakes might happen. The graphics tablet, by contrast, had a large illuminated grid of effects that we could select easily. It was at this stage that we came across the first major stumbling block. Some

of the routines took 20 seconds to load the pictures and we couldn't just leave the screen blank for that amount of time. We had to find another way of mixing the software together. The solution appeared to be to rewrite all of our effects in machine code.

Some hairy machine code

We altered all the routines to run as machine code interrupts, updating a small part of the screen every 1/50s. That way, you could still perform an effect on a picture whilst loading other effects or other pictures. This was by no means an easy thing to do as changing every pixel on the screen takes more than 1/50s. Indeed, realistically, you could only hold up the computer on interrupts for about 1/100s, otherwise you would just be continuously interrupting the foreground program which would stop completely.

The way to solve the problem was to break down the task into smaller chunks. Our routines had to update just one in every sixteen pixels on the screen each time the interrupt occurred. It then took sixteen interrupt cycles for one update of the screen, but each single cycle was scattered within the step between pixels so that the update looked smooth and continuous to the human eye. This eventually worked better than we had hoped for but it took so long to amend all the routines that I was still preparing software on the night before the service.

The service

For the service itself, we had hired a four-channel video mixer and a video projector, projecting onto an eight foot screen. Other hardware brought on the night by all those who helped, included numerous TV's, two high-specification music keyboards, a 16-channel sound mixer, reverb unit, amp and speakers – not to mention the two slide projectors controlled by a BBC B. We mixed video from two video recorders, along with text from an Amiga, live video from a camera of the person speaking and the visuals from the Archimedes.

The 20 minutes before the service started were the longest of my life. As people started coming in, we were all very nervous about whether it would work. However, after quite a few last minute prayers, everything went smoothly and the congregation loved it. The service started with lively music whilst people entered and sat down. Then after a short

introduction and a prayer, we played our video showing the beauty of God's universe (a computer animated tour edited from clips such as NASA's Voyager space probe simulations). We followed this with prayers of intercession and thanks and a bible reading. Then we had a live singing session to some verses including a beautiful recomposition of 'Great is the Lord', created using soft drums and pan pipe sounds by one of our talented musicians on his Korg WFD01 keyboard.

Our main sermon about the relevance of Christ was enhanced by placing the image of the preacher on the large screen whilst over-laying pleasing and subtle effects behind her on the screen as she spoke. Finally, we had a beautiful slideshow of galaxy pictures displayed whilst a group gave a powerful combined reading from the back of the hall.

Do technology and Christianity mix?

All the time, we aimed to enhance the service and not doing anything that would distract from it. In the end, I think we achieved what we set out to do. Certainly, we brought the younger members of the community (over 70 of them) back into the church and taught them something of the relevance of God's creation and how he is still with us today. The whole service was one of enlightenment and beauty both to the people and to me. Looking back on it, I cannot believe that we could have accomplished what we did without guidance and help from God – we are all complete amateurs in this. We had very little in the way of skill or experience in multimedia but what we did worked and felt right.

Where do we go from here?

So where are we going in the future? Well, spiritually, the church is behind us all the way and we will be running another service on October 2nd. Several other churches have showed an interest in either running a joint service or just seeking our assistance to help them put on a similar service. In all our efforts, we are trying to make sure that the technology is just an aid to the service not a dictator. As such, we've tried to keep our visuals as varied and spontaneous as possible to assist us in whichever direction the service may take.

The latest technology?

On the technology side, we'll probably use old BBC

Micros (as we have several of them) for displaying text. The Amiga was unreliable and kept falling over and its text fonts were too small and difficult to read on the screen. If we use Beebs, we can send VDU commands down the serial port and display the Archimedes outline fonts on the old monochrome mode 0 screen. I've upgraded the A3000 to 4Mb and ARM3 now so that we can cope with the visual effects that we wish to do. The only other main factors are the cost of hiring the video projector and mixer (over £250) and the necessity to be original and not copy other people's visuals.

To this end, I'd like to make an appeal for help to anyone out there, Christian or not. If you have either

some artwork or a graphical demo that is your own work and you think may be relevant to the service and you would like to see it shown, please send it to me on a disc to the address given below. I'm also interested to hear any advice or opinions that any readers may have on this subject, so please don't hesitate to write to me.

If nothing else, our service made two converts to Christianity – my friend and I were confirmed at our church on July 10th.

If you have ideas, comments, questions, graphics or suggestions, please write to me, David Cartwright at: 53 Bowshaw, Dronfield, Sheffield, S18 6GB. **A**

Basic WIMP Programming on the Acorn

Dave Floyd

Basic WIMP Programming on the Acorn by Alan Senior is a 464 page book, complete with disc, which aims to teach the reader how to create multitasking WIMP-based programs using the Basic programming language as supplied with the Archimedes. It is published by Dabs Press and costs £14.95 (£17 through Archive).

The cover

BWP (as I shall call it) is perfect bound, and although the point has been made before, I must say that this kind of binding is not really suitable for this kind of book as it will not lie flat on the desk. Although perfect binding is cheaper and looks better on the shelf, I feel that the extra user-friendliness gained by ring binding is worth the added expense.

Overview

The assumption is made by the author that the reader is already conversant with Basic V and with the RISC OS operating system at a user level, such as running applications and the effects of the different mouse buttons, etc. The book also does not attempt to replace the BBC Basic Guide or the PRM, although more help than normal is given in these directions within its pages.

Coffee time

It does not take long before you realise that BWP has a different outlook on teaching to many of its

competitors. Most books that attempt to teach any computer-related subject try to involve the reader at as early a stage as possible by getting them to run, type in or modify small programs, and forcing a kind of interaction between the reader, the book and the computer. BWP is different.

My advice would be to make a large pot of coffee, find a quiet room and make yourself comfortable. Depending on how fast a reader you are, it could be some time before you reach that stage. If I have made it sound like a daunting prospect, it was not intentional. From the basic ideas behind multitasking and the WIMP front end through to error-handling and debugging, the author has used a patient and informative style. Even those who know much of the information contained in the first 120 pages should find it an interesting read. Also, by understanding the principles of what you are trying to do, in advance, it makes it far easier to understand what is happening and why, when the time comes to study the sample programs and, later, create your own.

Bare bones

Detailed study of the example applications is next on the agenda, and here lies the real advantages behind the philosophy of this book. With the exception of the first one, which is almost as basic as one could get, all further examples are based around a skeleton application (!BareBones), to which the

necessary code has been added. Although each example demonstrates different aspects of WIMP programming, they all follow the same basic format, so are easy to follow and understand.

A comprehensive procedure/function library is also included, which means that once you have understood the examples and are ready to write your own programs, it becomes (almost) as easy as painting by numbers to create the user interface and standard functions such as save boxes etc, thus saving you time to concentrate on the individual purposes of your program.

The programs and procedure/function library supplied are copyright, but permission is given to use them in either PD or commercial software so long as acknowledgement of their use is made. The style which the acknowledgement must take is stipulated within the book. I think this is a very fair and sensible attitude for both the author and Dabs Press to have taken. The library is also included on the disc in two formats, one which you should use for programming, and the other with full REM statements and notation for browsing and reference.

Utilities

Also on the disc, and detailed within the book, are some utility programs. The Basic <-> Text converters will only really be of use to those who have not upgraded to RISC OS 3, but the others will be of use to everyone. The SWI converter, for example, converts SWI calls from names to numbers and vice versa, and the menu viewer, takes the menu templates that you create and displays them on screen so that you can quickly check you have made no mistakes in your design.

And there's more

The final section comprises one of the most detailed and worthwhile collection of appendices that I have encountered. The 175 pages contain the variables used by the library functions, the interdependence of library procedures and functions to each other, a REMed listing of the procedure library, Basic V extensions and SYS calls. Certainly, the Basic V extensions will be of use to anybody who learned programming on a BBC, as an easy reference to the extra facilities available. The section on SYS calls provides a subset of what is already available in the

PRM, and for those who will not be programming enough to justify the cost, it should be detailed enough to see them through without too many problems. Contents and index sections are also included, and these match the high standards set by previous Dabs Press publications.

Improvements?

One thing I would have liked to see included is an extra section setting out the steps to creating a new application not included on the disc. This could take the form of an ordered exercise in which you would be forced to do the thinking, in small steps so that you could check that things were going according to plan. A further section would detail the steps you should have taken, thereby enabling you to put right any errors you had made before continuing.

Although this sounds very much like school textbook territory where, on completing a chapter, you have to answer questions on it, I feel it would have been a nice touch, enabling the reader to check whether he or she had really assimilated as much information as they thought they had. This is, however, a small point and should not detract from what is the best WIMP programming tutorial that I have come across.

Also, in the appendix relating to SYS calls, there is an alphabetical list, cross-referencing the appropriate page numbers in the PRM where they can be found. The PRM in question, however, is the RISC OS 2 release. I would have expected to see page numbers quoted for both that and the RISC OS 3 version. I suspect the reason for the omission is that the book was printed before details of the RISC OS 3 PRM were known, but perhaps the information could have been included as an extra file on the disc.

Conclusion

Skeleton programs and procedure libraries are by no means a new idea and have been available for a while from the public domain and magazine cover discs and listings. None, however, have been documented and explained to the extent that BWP achieves. For anybody who wants to learn how to write multitasking WIMP-based programs, I can wholeheartedly recommend this book – I only wish something like this had been available six years ago. **A**

Drawfile Display in Basic

Hugh Eagle

Until recently, displaying drawfiles on the screen was a fairly complex programming task, but Acorn have recently revolutionised the programmer's life by releasing a module for rendering drawfiles.

Although the module (called DrawFile !) is not public domain, Acorn have made it freely available. It was included, together with a demonstration program from Acorn (written in C), on the monthly program disc for Archive volume 7.7 and Paul will include it again on this month's disc if there is room. The module can also be obtained from PD libraries - if by no other means, you can get a copy by ordering version 1.13 of my program PickAPic which contains the module!

A drawfile consists of a short header section, containing information such as the size of the bounding box, followed by a sequence of draw objects such as lines, curves, text and sprites. Until now, your program would have to work laboriously through the file, object by object, reading the descriptions of the objects one by one, working out scaling factors and colour translations, and calling the appropriate operating system routines to display each one. This would involve many lines of code.

However, with the DrawFile module loaded, the following code is all that is required if you want to prompt for the name of a suitable file, then clear the screen and display it. As well as cutting out reams of code, the program also runs much more quickly than an equivalent Basic program.

```
INPUT "Please type in full pathname of
      drawfile: "FileName$
SYS "OS_File",5,FileName$ TO ,,,,FileLength$
DIM DrawFile% FileLength$
OSCLI("Load "+FileName$+" "+STR$"DrawFile%")

REM Leave desktop and clear screen
MODE 15

REM Clear background to white (most draw
REM files will look odd on black background)
GCOL 191 TINT 192:CLG
SYS "DrawFile_Render",0,DrawFile%,
FileLength$,0,0
```

It could hardly be simpler, could it? Of course, nothing in real life is quite that simple. Since the drawfile is displayed at its pre-defined size and position relative to the bottom left-hand corner of the screen, the picture could easily be too big and overflow the edges or even be off the screen entirely. The first stage in refining the program is therefore to define a procedure that will adjust the magnification and positioning of the picture:

```
DEF PROCRenderDrawFile(DrawFile%,
      FileLength$,OriginX$,OriginY$,
      Scale,TransfMatrix%)
REM Render drawfile with origin at OriginX$,
REM OriginY% (screen units) scaled by a
REM factor of Scale TransfMatrix%
REM is a reserved block of 24 bytes
!TransfMatrix%=Scale*&10000
TransfMatrix%!=0
TransfMatrix%!=8=0
TransfMatrix%!=12=Scale*&10000
TransfMatrix%!=16=OriginX%*256
TransfMatrix%!=20=OriginY%*256
SYS "DrawFile_Render",0,DrawFile%,File-
      Length$,TransfMatrix%,0
ENDPROC
```

This procedure will move the origin of the drawfile from the bottom left corner of the screen to (OriginX%, OriginY%) and magnify it by the factor Scale. The only additional feature introduced here is the use of a "transformation matrix" of the form:

$$\begin{pmatrix} a & b & 0 \\ c & d & 0 \\ e & f & 1 \end{pmatrix}$$

the significant numbers in which are defined by the contents of the six-word (i.e. 24 byte) block at TransfMatrix% (space for which must be reserved by a DIM statement earlier in the program). I'm afraid there isn't room here for a detailed explanation of matrix arithmetic but, in fact, these six numbers are capable of defining any combination of rotation, translation or stretching that you desire. However, all we are interested in here is the simple transformation of moving the origin and magnifying the drawing in both the x and y directions by the same factor, Scale. To achieve this, the elements of

the matrix are defined as follows:

```
a = Scale * &10000
b = 0
c = 0
d = Scale * &10000
e = OriginX% * &100
f = OriginY% * &100
```

The next stage is to define the following procedure to scale the drawing automatically to fit a given rectangle and to centre the drawing inside it:

```
DEF PROCRenderDrawfileCentredInRectangle(
    DrawFile%,FileLength%,RectLowX%,
    RectLowY%,RectHighX%,RectHighY%,
    TransfMatrix%,BBoxCoords%)
REM TransfMatrix% is a reserved block of
REM 24 bytes and BBoxCoords% is a reserved
REM block of 16 bytes
```

```
LOCAL BBoxLowX,BBoxLowY,BBoxHighX,BBoxHighY
LOCAL XScale,YScale,Scale,OriginX%,OriginY%
```

```
REM Get the bounding box coordinates
REM (assuming the drawing is at its
REM defined position and scale...
REM i.e. it is untransformed).
SYS "DrawFile_BBox",0,DrawFile%,FileLength%,
    0,BBoxCoords%
```

```
BBoxLowX=!BBoxCoords%/&100
BBoxLowY=BBoxCoords!/4/&100
BBoxHighX=BBoxCoords!/8/&100
BBoxHighY=BBoxCoords!/12/&100
XScale=(RectHighX%-RectLowX%)/(BBoxHighX-
    BBoxLowX)
YScale=(RectHighY%-RectLowY%)/(BBoxHighY-
    BBoxLowY)
```

```
REM The next line maintains the original
    proportions
IF XScale>YScale THEN Scale=YScale ELSE
    Scale=XScale
```

```
REM Omit the next line if you want to allow
REM small pictures to be magnified to fill
REM the rectangle.
IF Scale>1 THEN Scale=1
OriginX%=(RectLowX%+RectHighX%)/2-(BBoxHighX
    +BBoxLowX)*Scale/2
OriginY%=(RectLowY%+RectHighY%)/2-(BBoxHighY
    +BBoxLowY)*Scale/2
```

```
PROCRenderDrawFile(DrawFile%,FileLength%,
    OriginX%,OriginY%,Scale,TransfMatrix%)
```

ENDPROC

If these two procedures are preceded by a few lines of code such as the following, we have the beginnings of a useful program:

```
DIM TransfMatrix% 23
DIM BBoxCoords% 15

INPUT "Please type in full pathname of
    drawfile: " FileName$
SYS "OS_File",5,FileName$ TO ,,,FileLength%
DIM DrawFile% FileLength%
OSCLI("Load "+FileName$+" "+STR$`DrawFile`)

PRINT "Please type in the coordinates of the
    bounding box"
PRINT "LowX, LowY, HighX, HighY"
PRINT "for example type 200,200,600,600
    including the commas"
PRINT "then type <Return>"
INPUT RectLowX%,RectLowY%,RectHighX%,
    RectHighY%

MODE 15
GCOL 191 TINT 192:CLG

GCOL 23
RECTANGLE RectLowX%,RectLowY%,(RectHighX%
    -RectLowX%),(RectHighY%-RectLowY%)
```

```
PROCRenderDrawfileCentredInRectangle(Draw-
    File%,FileLength%,RectLowX%,
    RectLowY%,RectHighX%,RectHighY%,
    TransfMatrix%,BBoxCoords%)
```

END

To make this program into a self-contained package, all that is necessary is to call it !RunImage and place it inside an application directory along with the DrawFile module and a !Run file reading simply:

```
RMLoad <Obey$Dir>.DrawFile
Run <Obey$Dir>.!RunImage
```

Conclusion

I hope that readers find this article interesting. If there is any demand, I shall follow it up with one on the rather more demanding subject of displaying ArtWorks files. **A**

Technical Details of the DrawFile module:

Acorn's technical description of the SWI's in the DrawFile module reads as follows:

DrawFile_Render

Entry: R0 = flags:

bit 0: = render bounding boxes (as dotted red rectangles)

bit 1: = do not render the objects themselves

R1 -> drawfile data

R2 = size of drawfile in bytes

R3 -> transformation matrix

= 0 <=> use identity

R4 -> clipping rectangle in OS units

= 0 <=> no clipping rectangle set up

Exit: All registers preserved

Use: This SWI renders a drawfile at a given screen position where that position is defined as screen position 0, 0 with the x- and y-translations as specified in the transformation matrix. Hence to render a non-rotated 1:1 drawfile at (x, y) (screen coordinates in OS units) the transformation matrix is

$$\begin{pmatrix} 1 << 16 & 0 \\ 0 & 1 << 16 \\ 256 * x & 256 * y \end{pmatrix}$$

The effects of calling the module with the matrix not of the form

$$\begin{pmatrix} f & 0 \\ 0 & f \\ x & y \end{pmatrix}$$

(which is a translation and a magnification) should not be relied on.

The clipping rectangle is typically a redraw rectangle returned by the Wimp on a redraw window request.

If R4 = 0, the whole drawfile is rendered. If non-zero, only objects which intersect the clipping rectangle are rendered. If R3 = 0, unit transformation matrix is assumed (i.e. the drawfile is rendered with its bottom left corner at screen coordinates (0, 0)).

Altering the transformation matrix can allow you to alter the scale of the diagram. For example, you can use the following transformation matrix to render your diagram at a scale of 2:1:

$$\begin{pmatrix} 1 << 17 & 0 \\ 0 & 1 << 17 \\ 256 * x & 256 * y \end{pmatrix}$$

and the following to render your diagram at half scale:

$$\begin{pmatrix} 1 << 15 & 0 \\ 0 & 1 << 15 \\ 256 * x & 256 * y \end{pmatrix}$$

DrawFile_BBox

Entry: R0 = flags (must be 0)

R1 -> drawfile data

R2 = size of drawfile in bytes

R3 -> transformation matrix

= 0 <=> use identity

R4 -> 4-word buffer to hold the bounding box of the drawfile (x0, y0, x1, y1) in draw units

Exit: All registers preserved. Buffer pointed at by R4 holds the bounding box of the drawfile (x0, y0, x1, y1) in draw units.

Use: This SWI is used to determine the bounding box (in draw units) of the given drawfile, as if it were plotted with the transformation given.

DrawFile_DeclareFonts

Entry: R0 = flags

bit 0: do not download font (passed to PDriver_DeclareFont)

R1 -> drawfile data

R2 = size of drawfile in bytes

Exit: All registers preserved. All fonts used by the document have been declared.

Use: If a printer requires font declarations, this SWI must be called for each drawfile to be printed, between the calls to PDriver_SelectJob and PDriver_DrawPage.

All fonts are declared as "kerned", since this includes the non-kerned case.

Other information

The SWI chunk number of the DrawFile module is 0x45540 and its error base is 0x20C00. **A**

Language Column

David Wild

After I sent in the last Language Column about S-Base (Archive 7.7 p26), I wrote to Longman Logotron pointing out that the manuals tended to contradict one another, and also pointing out that there were no instructions on how to do the "tweaking" that I mentioned. I have had a letter from them in which they say that my comments were useful, and that they would be borne in mind as and when the manual came to be rewritten.

A large part of the problem is that, when programmers are enthusiasts and there is no direct customer (as there would be with a bespoke application), they tend to assume that other people are enthusiasts too and write the documentation accordingly.

A similar problem arises with sales literature from such programmers which can contain such things as "written in machine code". While this can be of interest for enthusiasts, it should not be of any concern at all to people in offices and workshops wanting to use a program to help in their work. I suspect that it is a hangover from the days of small machines such as the BBC where a "machine code game" probably was a better game, not because machine code programmers were better, but because the code made better use of the limited amount of memory. Nowadays, with the use of compiled programs rather than interpreted Basic, this is largely irrelevant. The danger is that mention of the language in which the program is written tends to make people think that they need to have technical knowledge to be able to use it.

One of the problems that Acorn faces is that too big a proportion of its users are enthusiasts, making others think of it as an enthusiasts' machine rather than one which can be of use to ordinary clerks, engineers and accountants. Enthusiasts are needed: one good thing about using an IBM compatible is that help is easily available, often by just shouting in the office! Acorn programs are often much simpler to use, but this seems to be a closely guarded secret. If there is such a thing as a best language, which I doubt, it is almost certainly going to be in the area of programmer productivity rather than program

quality. Indeed, it will often be the quality of the compiler which will force a decision. Some years ago I was working with a PC project management program which turned out to have been written in compiled Basic. When I asked someone I knew at the software house, he told me that, at the time they started selling the program, the Basic compiler was the only one which was virtually certain to provide correct code, although they would have preferred one with better data structures.

When you think that a large part of ChangeFSI is written in interpreted Basic, you realise that, although it is not often a good idea to use the interpreted version for distributed programs, there is little or nothing that cannot be done in any of the languages available to us. I have a copy of Almanac and would endorse the criticisms by the reviewer in the latest Archive 7.11 p70 but, in spite of the boast in some of their sales literature about using machine code, it is unlikely that this is the reason for the problems which are more likely to have come from lack of thought about what the user really needs.

An unfortunate feature of trying to be a good programmer is that no-one will ever know about your achievements so long as you succeed, whereas it will soon become obvious if you have been a bad programmer. Even if you were to break the rules and disassemble a program you would be unlikely to find out about the programmer's skill; partly because you wouldn't know what problems were met and also that, as in almost any area, once a solution has been found it becomes "obvious", even though many people have been trying for a long time to find it.

Wandering around Blackwell's bookshop in Oxford recently, I came across a copy of "Code Complete" by Steve McConnell of Microsoft. In it, he presents ways of improving the standards of commercial programs so that they are no longer "buggy, late and over budget". He gives examples in 'C', Pascal and Basic but points out that his lessons can be extended to any procedural language.

I would like to suggest that every programmer should have a copy but, with it costing £29.95, it isn't really possible. All the same, I would suggest

that every establishment employing programmers ought to have a copy and that individual programmers should try to read it. There are certainly some changes that I shall make in my own program construction and I suspect that everyone could benefit from the lessons learned.

A recent issue of Archimedes World brought a copy of the PD program Zap with various extensions for programming in specific languages. One thing

offered is the ability to have different parts of the program, such as variables, key and reserved words, and comments in different colours. I looked at the C and assembler examples and my first impression was that they were a little bit messy and overpowering. You can, though, alter the colours yourself and I think that the ability to have comments in a different colour could be very valuable, especially if you have "commented out" part of the program. **A**

Payroll Manager (3.0)

Dave Wilcox

The aim of Payroll Manager, from Silicon Vision, is to reduce the time and effort involved in maintaining a company's payroll. I thought at first that the software was going to have a long learning curve and be very intricate to set up. I am not usually involved in the accounting side of the business, so I set up the software, initially, with a fictitious company, but this was unnecessary – I could easily have used the real data from the start.

The package

The program comes on one disc with a 20 page A5 manual with no elaborate packaging. There are two main parts to the program, !Data and !Payroll94, but also included are the usual !System and !Sysmerge files, and a text file with any late additions not yet documented.

The first job is to enter the name and address of the company, followed by the details of each employee. This can be done in one file for all staff, or one file per department. The number of employees that the system can handle is only limited by the available storage space and, as a guide, the following figures are quoted:

800Kb floppy	48 Employees
1.6Mb floppy	100 Employees
40Mb hard drive	2400 Employees

This will give storage space for the full 52 weeks pay period for the stated numbers of employees.

Once the software is initialised by telling it whether pay is weekly or monthly and the necessary information relating to NI and PAYE, you are almost up and running. All that remains is to enter the

requested details for each employee. This will include entering details of payroll figures to date, stoppages etc. Your new payroll is now ready to use.

Each time you use it, you enter the pay date, hours worked and the rates applicable to these hours. There is space provided for three rates of pay, bonus payment, SSP, holiday pay and SMP. Calculation control requires entry of the employee's PAYE code, and weekly or monthly pay should be indicated along with the appropriate NI tables. Total earnings will then be calculated by the software using the appropriate data and settings for each employee. A separate section takes into account further deductions or allowances to be made, e.g. private pension scheme contributions etc, and a running total is kept of pay and stoppages received to date.

From the menu, it is easy to (a) search for any employee in any tax period; (b) save repetitively entered data as a template for future use; (c) write-protect records and (d) print out either pay advice, worksheets or breakdowns to the printer or to the screen.

The printout of the worksheet will show a full year's deduction sheet for the selected employee and will let you print out a P60/P14 at the end of year. The printout of the breakdown will inform you exactly what notes and coins are required to enable you to make up all pay packets for the period. If you require hard copy of this information, the software assumes that you are using an IBM proprinter emulation. This is in order that the IBM font can print out the necessary stationery lines onto blank paper, saving on the purchase of special stationery. If you cannot emulate an IBM proprinter, the data can still be printed minus the lining.

This software is also capable of handling payment to contractors, commissions and royalties and directors' remuneration. Data can be exported as CSV files for inclusion in reports or spreadsheets. It is possible to use this program as a stand-alone package or in conjunction with book-keeping software – it really does appear to cover every eventuality.

Conclusion

There are two major oversights with this program from my point of view. The first is the lack of password protection on entry which is needed to provide security for the information contained therein. I also feel that the printer routine would benefit from more versatility. In particular, it should be able to use the RISC OS drivers.

The initial cost of this program is £99.95 inc VAT followed by a charge of £25 inc VAT per annum to upgrade for the following financial year. This upgrade will incorporate any variations in tax rates and such-like as the result of budget changes, etc. Is the time saved worth £25 per annum to you? I think it should be. Please also remember that the Data Protection Act requires you to be registered!

Despite the two minor gripes, the conclusion has to be that Payroll Manager does an admirable job of running a payroll, with a remarkably short learning curve. The small amount of setting up time is soon recovered with regular use. For a package designed for business use, the cost of initial purchase and upgrade seem reasonable and this would soon be recouped in saved time and effort. **A**

An Eye For Spelling

Paul Cross

"A spelling and handwriting aid based on letter patterns" is how the A5 ring-bound documentation describes the program. This does not sound very interesting but it describes the program accurately and it would be a mistake to dismiss it because of a lack of gimmicks and pretty pictures.

Along with the documentation is one floppy disc which contains the main program and other directories and utilities. The program is designed to run on all Acorn systems and sets the screen mode to mode 12. This is a pity if you have one of the later machines with better screen resolution. It runs on the latest machine, the Risc PC 600, albeit in the letter box mode.

Introduction

Spelling is one of the subjects in the 'Back to Basics' campaign that stirs much controversy and discussion in staff rooms across the country. It is also something of concern to many parents and employers as it underpins the important communication skill of writing.

Some people work on the theory that as long as you throw at the children as many spelling lists as possible, something will stick. In my view, this just does not work!

Those children, and for that matter adults, who cannot spell, see words as a whole and generally do not see or understand that words are patterns of letters that exist in certain combinations.

This is where the computer can assist the teacher. By using a program that stores structured lists of words grouped by letter patterns, the teacher can plan structured support for a child's learning programme.

An Eye For Spelling is just such a program. It is based on a programme of study devised by Charles Cripps, a well respected guru on the teaching of spelling. It is designed for children aged 5 to 11 but can also be used by older children with Special Educational Needs. It presupposes that the child has some level of reading ability. There are three banks of words graded and selected as words likely to be used and useful in both reading and writing.

An excellent program

As you read this you may think to yourself that this is all very dry and boring. Well, I have been using the program with a small group of children who have problems with spelling, and, in a short space of time, there has been an amazing improvement in three areas. Firstly, they have been motivated to consider spelling to be important; secondly, they have begun to recognise that words belong to fam-

ilies that can be identified by groups of letters; and thirdly, their handwriting has improved.

How the program works

After the program has been initialised by entering your name and address, you can make as many copies as you like for a single site. The licence also allows teachers to make copies for use at home to prepare school work. All of this comes at the very reasonable price of £37.50 +VAT from ESM, or even better, £38 inclusive from Archive.

Once the program is loaded from floppy or hard disc, an 'eye' icon appears on the iconbar. If you click on this, the introductory screen appears. You work through a series of screen selecting the level and letter pattern to be used. You can even select which hand the child writes with, as this will change the way the work is written on the screen to suit the handedness of the child.

The program then takes you through the 'look - cover - write - check' routine to aid the learning of

the words. The handbook explains this in great detail, with illustrations on the way to help.

Extra features

There are two extra features that add to the usefulness of the program. Firstly, as the program 'writes' the word for you in a joined style of writing, and you can print out word lists, this gives a worksheet that the children can use away from the computer. Secondly, even though the word lists are very comprehensive and well structured, it is useful to make up your own. The facility to do this is built into the program.

Conclusions

For the busy teacher in the classroom, this program is a must. It is the best 'aid to learning spellings' I have seen, and is excellent value for money. It motivates those children who have difficulty with their spelling and is efficient in the limited computer time available to each individual child. It gets my star rating for programs I have seen recently. **A**

Autograph

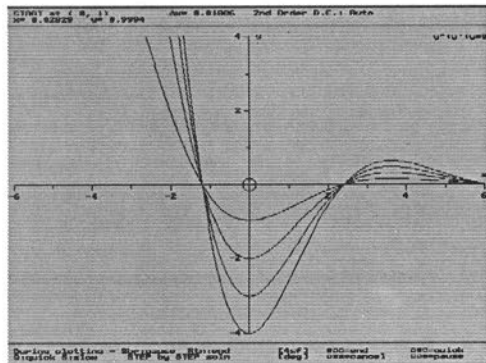
Colin Jeavons

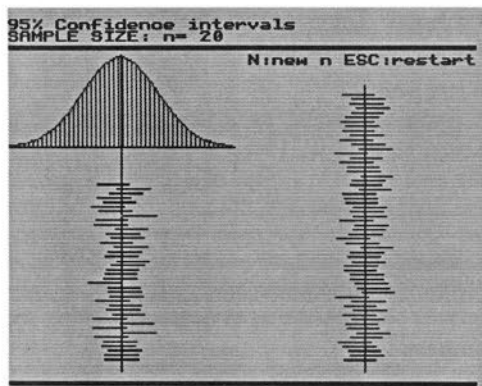
In recent months, a number of leaflets have appeared in schools extolling the virtues of this piece of software, and the obvious questions are: 'What is it?' and 'Is it as good as it is claimed to be?'

Essentially, Autograph is a teaching package designed to help in the understanding and illustration of many aspects of mathematics seen at both GCSE and A-level. It covers a very wide range of

topics and every time that you delve into it, you find a new idea and ask why no-one has thought of this before. Is it as good as it is claimed to be? Yes, with one proviso that I will come back to later on.

Autograph comes on two discs, one for the program and one for data, and very extensive documentation. The documentation for this software must rank among the best and comes in three separate parts. At the most basic, there is a small booklet that gives examples that have been tried in the classroom with very clear instructions of precisely what steps to follow. This is always a help for a teacher approaching a new piece of software for the first time. For the more technically minded, there is a 56 page reference manual giving detailed information on setting up the program, interchange of data between the individual applications, ideas for setting up a mathematics laboratory and much more. Finally, there is a very readable 350 page book giving information, ideas and suggestions about using the various programs. There are reputed to be over 1000 screen shots in these books and they do ensure that the





documentation is very readable. Incidentally, all of this work was published using Ovation DTP and it is a reminder of how powerful that package can be.

What is in the package?

The application is divided into four main areas and within each area there are up to eight different programs. The four main areas are: Graph Plotter, Graphic Calculator, Pure Mathematics Programs and Statistics / Data Handling.

The Pure Mathematics section illustrates the diversity of ideas that are present: Algebra, Trigonometry, Transformations, Matrices, Maclaurin Series, Sequences, Combinations and Tables.

In the Statistics section, the ideas range from a simulation of tossing two dice to an illustration of the Central Limit Theorem and Confidence Intervals for sample means. The A-level statistics programs, involving a comparison of Binomial, Poisson and Normal distributions as well as the Central Limit Theorem, are particularly useful and enable the students to obtain a real appreciation of these topics.

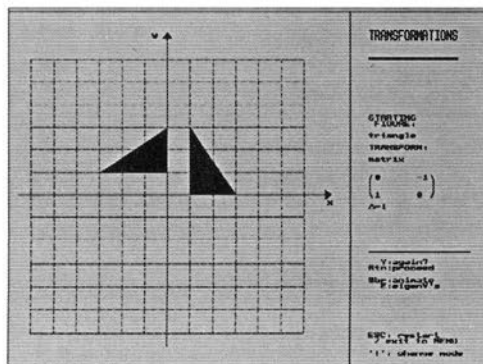
Many of the ideas have been seen before on the old MEI suite of programs and a few still have the look and feel of BBC programs, but they still work and have been extensively trialled in schools. At the other end of the scale are the brand new Graph Plotter and Graphic Calculator suite of programs and it is with these that the best is seen, as well as a problem.

The Graph Plotter is powerful, very versatile and will do anything that you can think of and much more! Expressions can be entered in many forms:

Cartesian, parametric, polar, implicit, composite functions, families, differential equations and it is claimed that almost any expression up to, and including, college level will be accepted. Having plotted the expression there is a wide choice of options and only a few of them can be mentioned in this review. The gradient function, both 1st or 2nd gradient, can be plotted either using the same axes or on a different set by adopting the twin screen mode. Likewise, the integral function can be drawn from any starting point.

Whilst much of mathematics teaching involves a logical progression of ideas with proof and reasoning being of paramount importance, there must also be room for intuition and a sense of 'seeing' that an idea is true. A simple illustration of this would be to draw the graph of $y=1/x$ and then ask for the integral to be drawn. The simultaneous plotting of $y=1/x$ and $y=\log_e x$ would do much to emphasise their interconnection and to clarify this traditional problem. Equally useful is the ability to conduct numerical integration to find areas underneath curves, volumes of revolution, arc length, surface areas of revolution and so on.

I could write much more about the many other features that are available but these are all well documented in the program description manual. It is, however, this wealth of additional features and the manner in which they have been catered for that causes the concern that I mentioned at the start of this review. Autograph is designed as a teaching tool and, as such, it takes over the desktop when being used (although a return to the original desktop



setting is only one keypress away); at first this seems strange but one soon gets used to it. Having taken over the screen it does not, unfortunately, use the normal conventions of menu control using the mouse. Rather, the various options are initially selected by moving a cursor around the screen and then further selected by following the instructions and prompts that occur. To the unfamiliar user, this can be a daunting prospect since there are so many possibilities.

The teaching program does need to be carefully thought out so that the students can obtain the maximum benefit otherwise there is a danger that some, especially the weaker ones will become lost. This point has been recognised and, in most cases, sensible default values or actions take place by pressing either <return> or <space>.

Would I use this in my own school? For certain applications I already do and I will continue to expand my use of it in the future. At present, I use it for differential equations, sixth form statistics and the Newton-Raphson method. For standard graph plotting to beyond A-level, I would use the simpler graph drawing program produced by Graham Howlett at Charterhouse. In terms of being user-friendly this cannot be beaten.

As far as I am aware, Autograph is unique in the field of software for Acorn machines. It contains a wealth of useful ideas and, provided staff and students are confident with its layout, it should find a place in the teaching programme of many schools.

Autograph costs £90 inclusive (no VAT) from Eastmond Publishing. A site licence costs £180. **A**

Birds of War

Christopher Jarman

As an aficionado of flight simulators, I was expecting the ultimate when I loaded up *Birds of War*. In many ways, my expectations have been fulfilled. It is a game covering a large field or more correctly, four historical eras. It is pretty well essential to load the seven floppies onto hard disc, and to carry out some extra installations for maps etc. Minimal instructions for this are given in the "Pilot's Brief", otherwise the manual is quite comprehensive and easy to follow.

The game begins with a clipboard showing a roster of pilots' names. You choose a name to make the first flight. Subsequently, these can be invented and added to with callsigns or nicknames. You are then offered a choice of eras in which to fly. The 1920s, 1945, 1960s or the 1990s. On selecting your era, an appropriate jolly burst of period music brings a feeling of those times to the game! (This assumes you have 4Mb of RAM. Less than this, and there may be a little trouble always getting full sound.) There follows an interesting and quite complex chain of briefings, intelligence, controls, arming and aircraft selection before you then go for take-off.

A vast array of choices

Each era contains a choice of six battlefronts or campaigns and a choice of eight different aircraft.

(There was a bug in the Malta campaign in 1945 causing the computer to seize up. Fourth Dimension say this has now been eradicated, but you have to return all seven discs to them to have it fixed.) The choice of weaponry and control over the difficulty levels of the game seems almost infinite! For example, there will be no need for cheats in *Birds of War* because John Whigham has built in the ability to choose infinite ammo, infinite fuel and invulnerability if you wish. Also, the level of enemy pilot competence can be selected from rookie to veteran.

The selection of eras is inspired because there are three distinct kinds of nostalgia catered for, plus a perfect contemporary feel about flying a stealth bomber in the Gulf for the 90s.

There is so much to think about in the way of weaponry, decoys, radar and the amusing briefings, that it would be spoiling the fun to elaborate too much in a review. Enough to say that with so much choice I don't yet see an end to it in the next few weeks. In fact, after a month I am still selecting invulnerability and rookie enemy pilots in order to survive the learning period! You may choose accelerated time or fast accelerated time; and minimum, medium, maximum or auto-setting for detail. You can fly with or without clouds, with or without a

graduated horizon or shadows. When you are killed or shot down you get an amusing epitaph or sometimes a telling off from your CO for bending a valuable aircraft!

For those who like a competitive game, I'm afraid that there are no scores other than the count of planes shot down or campaigns survived. There is no graduated promotion to Marshall of the RAF. As far as I can tell, players remain as humble flight lieutenants all their lives. As life expectancy is very short I am hardly surprised. I have not survived one mission or even managed to land yet.

Suggestions for the future

I have one minor and one major comment to make. Firstly, it takes rather a long time to get flying again after being shot down. One has to click back through choosing a new pilot by name, and the first briefing, and then a new aircraft, and on to the airfield or carrier. I think there should be a short cut for the beginner who is constantly crashing.

Secondly, I believe that while Birds of War is terrific and well worth the money, it must be remembered by programmers that flight simulators are quite different from all other games. They appeal to a sense of exploration and a sense of place. Therefore maps are absolutely essential. The great and lasting value of Chocks Away is in its maps and charts. Quite apart from the action, it is enormous fun just to fly around a well-mapped landscape, under bridges, to land on strange airfields, and to work out

where you are. Remember, more of us were navigators in our day than pilots! Birds of War only has maps for eras 1 and 2, and these lack detail compared with Chocks Away. The radar and waypoint systems provided for navigation are fine as far as they go, in eras 3 and 4, but maps are needed. There is mention of electronic maps in the Pilot's Brief booklet, but try as I might, I could not locate them. I would be prepared to sacrifice quite a lot of choices of timing, clouds, decoys etc to have really detailed maps in a new update.

Conclusions

A satisfyingly complex flight simulator which may take months to complete. The different cockpit designs alone are worth the price. It contains an immense range of choices for the fussiest of pilots but could possibly do with more interesting landscape maps for the navigators!

Overall, it is excellent value for money. Birds of War costs £34.95 from Fourth Dimension, or £32 through Archive. **A**

This article disappeared somewhere between Christopher and the Editor so, since it was written, he has had more time to comment on it. He adds...

(Seven months later, I have given up on this game as being too difficult and gone back to Chocks Away. Some games have an indefinable 'playability' - I am not sure whether Birds of War has it yet, even though it appears to have everything else... or perhaps I am just getting too old for it!) **A**

Fact-File

(The numbers in *italic*
are fax numbers)

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4Mation

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APDL

Apricote Studios (p11)

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